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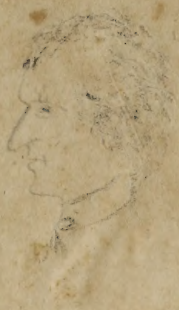

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Nov 10 1802
To
Mar 9 1803

A.A. EVANS

Notes

taken from Dr Rush's Lectures

upon the institutes, and

Practice of Medecine,

and on

Clinical cases. ——

Volume first

Amos A. Evans, M

885.31

Notes, &c.

November 10th [redacted] Dr Rush's intro=
=ductory Lecture was on the
subject of Hospitals: In compli=
=ance with the request of a
friend, he undertook to describe
what he conceived to be the best
plan for a receptacle of friend=
less sick. In the first place
he recommends, that, in our
Latitude, the building be erect=
=ed on high, airy Ground, of a
southern exposure: & convenient
to a copious source of pure wa=
=ter:- It should be two stories
high, and, instead of a cluttered
Garret, which has been known to
generate a species of Typhus
Fever, should have an airy and

neat attic story, plastered with lime.
It is better he thinks to have the windows large and few in number; being on that account both warmer in winter & cooler in summer. The fever wards should have earthen or ground floors, and all the wards arranged so as that the tenents of them may not in= =commode each other.-
If the site be properly adapted to the purpose, the water should be conveyed into the upper sto= =ries: for the Dr lays great stress upon air and water. The operating room should be at a distence from the sick wards; and in the form of an amphitheatre.
A room ought also to be set apart to contain the bodies of the dead previously to interment; and sepa= =rate that peculiarly diseased bodies might be examined with=

out the knowledge of the patients —
a building should be erected at some
distance from the hospital, for the
purpose of wash-house and bake-house
those processes being injurious when
carried on in the same house with
the sick — The privies ought to be
literally privy — so as that either
set could resort to them without
being seen by the other — Women
have been known to become much
constipated rather than be seen by
a male on their way to a Water-
The Dr closed his Lecture by
another recommendation of air
and water as an eulogium on
hospitals — Nov. 12 Lecture 2d.
was principally on the education, and other
preparatory acquirements necessary

for a student of medecine; the Doctor thinks the Latin & Greek lan-guages by no means essentially necessary to the study of medecine. In particu-lar in our country; — as we have to enter into active life at so early an age, that the most useful parts of science must be preferred to the ornimental. — Reading, writing, Arithmetic, & something of the Mathematics are among the useful parts of preparitary education. — Eloquence, acquired in debating societies — and the frequent perusal of the poets are recommended. — A legible hand writing is particu-larly inforced; as serious mischief has been done by prescriptions being indistinctly written. For instance aqua Fortis has been used for aqua Fonte

&c.— The study of the French & German tongues are highly serviceable to— A knowledge of Grammer and a cor= = rect diction, are indispensibly nec= = essary to the success of a practitioner or he will be suspected for a Quack.

Novem. 15 In the forepart of his third Lecture, Dr. Rush observed that the ears were more faithful than the eyes in retaining knowledge; of course, hearing lectures is better than read = ing books— In order that the whole of the lectures may be intelligable, it is necessary to attend every one; for one Lecture or even part of one, lost, may render subsequent allusions unintelligable— A student should attend chiefly to the diseases of our own country; and examine the sick himself, for there is as much difference between seeing a patient

reading a discription of his disease, as between the original & a painting: & more especially should he prefer the actual observation of those diseases of our own Country, which are treated of by foreign Authors as they appeared in theirs, to the perusal of their works; as our diseases bear a very different character from those of foreign Countries.

To evince the superiority of observation over closet study, we have the following circumstance; Hysteria & Worms are sometimes complicated; yet no author makes mention of such a fact. It is common for Empirics to rail against all theory, to conceal their ignorance; yet the Dr. says there are no false facts, and no contradictory

experiments, to 1. false theory in medicine. - We should be punctual in seeing our patients at the same hour every day and in furnishing the medicine soon after prescribing it; as it obviates disagreable uneasiness, and the ill effects of disappointment; which to a sick person are worthy of consideration. Dr. Rush knew a woman who laid awake all night in consiquence of physicians neglect to see her in the evening. We should avoid seeing patients very early or late in the day for obvious reasons. We should not be above being an Apothecary or preparing our own medicines; but like Sugar by learning the Apothecaries business - Be not carried away by attending to uncommon cases of disease; attend those which are most common.

Doctor Hamilton was seen to prefer the exa=
=mination of a case of common fever;
while the rest of the class were busy in
viewing a child which was born with two
heads:- his reason for which was, that
he never expected to see another child
of the same description; whereas, he ex=
=pected to meet with cases of fever eve=
=ry day. —— Be cautious in ascribing
cures to such & such remedies; for
the patient has often omitted taking
them. — Never ascribe a cure to bleeding
without ascertaining that it was done;
either by a sight of the blood or
of the Arm. Excacerbations of fever
often occur during the night that re=
=quire attention. Never leave off attend=
=ing your patients before they are
perfectly cured:- Death has been occa=
=sioned by neglecting them too soon.
Let no companies or engagements hinder
your attendance on your patients: if you
do not discover an interest in thier

recovery, they will soon think lightly of you & let your conversation with them inspire confidence; it is of great importance in the cure -- An instance is related of a physician who demanded a fee for the great secret of the art, which he was to teach his pupil; the fee being paid, he took his pupil into a private room, and very gravely unfolded it in the following words "Conceit can kill - conceit can cure" - private practice chiefly affords cases in high life - & there, too, we have most experience in Epidemics. - But Hospitals have their advantages; - a physician there is independant &c. - Hospital patients die more frequently than private patients, as they are often received in the last stages of ~~the~~ disease - are intemperate - exposed to impure air, &c. Students should attend the practice of both. - they should study with physicians who prepare

their own medecines:— They should also attend clinical Lectures.— The course before us says Dr Rush is composed of 4 parts— viz. physiology, pathology, therapeutics, and practice of physic.— The Lecture was concluded by some account of the diseases of the hospital patients. and practice of physic.— The lecture was concluded by some account of the diseases of the hospital patients.—— Novem 16th Lecture 4th. Observe a due respect and the rules of good breeding towards every part of the family in your visits to see a patient.— If a lady conduct you up stairs to see the patient, always walk up before her; but let her enter the sick room first:— and in returning down stairs walk behind her; for reasons which to every delicate mind must be obvious.— always let the patient know of your arrival before you enter the room; this

you may apprise him of by your walk, or by speaking.- The consulting physician should avoid visiting the patient alone; as questions may be asked, or he may make use of expressions, which will produce embarassment afterwards. Let the attend=ing physician speak to the patient first; and make the first enquiries. Do not feel the pulse immediately on entering the room of a sick per=son- Sit down on a chair, or stand, or some convenient place, ~~and converse a little first and make the first enquiries~~ (but) the pulse should be felt before the patient describes the disease, as speaking accelerates the pulse) and converse with the patient on some unimportant subject; but never introduce foreign subjects, nor speak of them, unless introduced by the patient — When the patient becomes perfectly at his ease, intro=duce the subject of his complaint,

but first tell him tell all he knows respecting it before you ask any questions; for the sick can generaly give the best description of thier situation, if not interupted by interrogatories; though they seldom give a correct account of the causes — Then 1st. enquire into the duration of the disease. 2nd. in what manner and place he was attacked 3d. the cause of the disease. Mothers and nurses are apt to ascribe the diseases of children to an imperfect cure of the small pox and measles — but erroniously. If any difficulty in discovering the cause occur, or it is not very apparent, inquire into his previous habits of living for severab days past; — what change of deet or diet he has experienced. — Spoil'd fish have been known to occasion sickness & vomiting & efflorescence on the skin: A change of dishes has excited yellow fever during its prevelance in this city. — we should inquire if the patient ever had the same disease before, and in what part of the world: — also if his former habits were temperate; (this to be known from his friends or acquaintances) for the gout at 40 has

often been the effect of intemperance at 20 -
Rheumatism & phthisis often alternate with
each other - Wounds, strains, and broken bones,
affect future diseases. The drying up of ulcers
suddenly, may occasion disease - Judge not
too hastily from dark colour'd stools -
steel will occasion black coloured stools
as certainly as malignant fever - always
inquire if the patient has taken any
and what medicines - sickness at stomach,
itching, suppression of urine, and also an
immediate flow of bile, have been caus-
-ed by opium - Inquire the native
place of the patient - For the disease
of foreigners are often influenced by
those of their own country - At the
time when the pewar prevailed at barbadoes,
which was accompanied with, or succeeded by
swell'd legs. those natives who came to this
country, and merely had our common inter
-mittents, had obstinate swellings of those
parts. People from warm climates bear bleed-
-ing less, when they settle in more northern,
than the natives of those climates. -

and those from cold countries will bear greater bleedings when they go southward, than those among whom they go — Complaints in the alimentary canal are often brought on, in young ladies, by the large use of acids, to prevent their growing too fat. — It is necessary to observe, that people of different nations, frequently call the same disease, or symptoms, by different names — for instance, what physicians call anxiety at the precordia, is call'd by the English "a pain in the stomach"; by the Scotch "a pain in the breast"; by the Irish "a weight at the heart"; — A New-englandman would call it "inward weakness"; and a person from the southern states "mighty poorly." Some diseases are hereditary — as gout, Mania, consumption, scrofula, &c. and on that account, require greater care in the treatment — In chronic diseases, inquire the age of the patient; and also that of his ancestors — As age is hereditary; and if his progenitors were long lived,

the prognosis is more favorable:- Family dis=
=eases may sometimes be cured by the same
remedies; when others will fail- as when
several of a family have Epilepsy: the
remedy which cured one, will often cure
the rest, while the most powerful of a
different nature have no effect— A
French gentleman was cured of Rheuma
=tism by applying leeches to the Hemorrhoi=
=dal veins— Dining with your patients,
you may sometimes discover the cause
of his disease to be improper dishes.-
Learn the temper of your patient- His
habits- If he have been habituated
to drink wine or spirits, he will require
more of those drinks during his ilness
than would be proper for another of dif=
=ferent habits— In female complaints
never loose sight of the state of the ute=
=rus, as it respects pregnancy, Catamenia
&c- and in those of children, never loose
sight of teething & worms— next inquire
into the actual seat of disease. Disease is al=
=ways in proportion to the predisposing cause

Inquire the state of the alimentary canal &c. — State of sleep - Examine the countenance the manner of his laying in bed: if the cubitus be natural. Examine the eyes - attend strictly to the pupils - color of the hair. — Red haird people more subject to phthisis. - Black haird folks of more irritable habits. — attend to the respiration - State of the skin. — voice - Tongue - white tongue a symptom of simple inflamitory fever & dysentery. - Brown tongue of bilious fever - dry tongue of typhus - Black tongue of highly Malignant fever - But be aware that Liquorice, black current jelly, & some of the wines will make the tongue black — Attend likewise to the color of the nails - Yellow nails are symptomatic of bile in the blood - Healthy peoples nails are red. - Nov. 17th Lecture 5th. It is uncertain to rely on the appearance of the patient. — I trust my pupils will be distinguished for their chief reliance on the

pulse.— ! Medium of healthy pulse 66 in a minute— at birth 140 — 3d. year from 80 to 100; this number of strokes in a minute continues to the 7th. year— at 12 the same as in adults— In old people slow and intermitting— a perfectly regular pulse in an old man is a sign of disease— The pulse is influenced by the sex — quicker in fe= =males as well as more frequent— Seldom slow among savages— quicker in large cities— In short people— climate & Sea= =son influence the pulse— heat accelerates it.— Slow in cold climates— seldom above 40 strokes in a minute in a greenlander. It is slower in the morning— quicker at noon— and generally slower in the evening. Slower in sleep than waking— On our back than on our side— quicker still when sitting up— The position of the arm affects the pulse.— When the arm is un= =covered, the pulse gives no correct idea of the state of Arterial action. Never feel the pulse in the arm that is laid on

Eating, drinking & the stimulating passions quicken the pulse— Conversation quickens it. se last lecture— Exercise always does A gentleman who had a preternaturally quick pulse, had an attack of fever after which it became natural—.

Morbid state of the pulse.— 1st. In frequency and quickness— pulse may be quick without frequency.— pulse may be quick without frequency— frequency caused by irritability of the blood vessels— slow pulse caused by apoplexy— by the excessive stimulus of some poisons.— 1st depressed pulse as seldom as 30 or 40 strokes in the minute, in pleurisy— it differs from the low or weak pulse in appearing in the early part of acute diseases; or a paroxism of such diseases as are periodical.— It occurs in inflamations of the stomach & bowels.— 2d. full, frequent, & quick pulse— call'd the synochus pulse.— 3d. Synocha full, quick, frequent & tense.— 4th Small, tense, pulse, like catgut, call'd sulky, or locked pulse— 5th. rabbling pulse; tense, full, & unequal— 6th quick, frequent, small contracted pulse; call'd Synochula. occurs in chronic inflamation.— 7th. Typhus pulse,

in the last stage of fever.— 8th. Typhoid occurs in the slow stage of fever.— 9th. Synochoid pulse.— 10th. Hectic pulse, quick, frequent, and often full.— 11th. the natural pulse, occurs sometimes sometimes in the most dangerous state of malignant fever.— Lastly thread like pulse, occurs chiefly in the act of dying.— Dr Ramsey observed that the last pulsation of the heart was much fuller than the preceding ones.—

Dichrotis pulse is known by 2 quick strokes, and 2 slow ones. I believe! insidious pulse. In palsy, the pulse is quicker on the sound than on the diseased side.— weak, low pulse, without fever, occurs in hypochondriasis, & often profuse hemorrhages.— Aneurysmatic pulse, occurs in stomach & bowel complaints, also a symptom of aneurism.— Directions for feeling the pulse.— Never feel the pulse immediately on entering the room; but it should be felt before the patient describes the disease as speaking accelerates the pulse.— Feel the pulse with your fore finger it has more sensability than

the thumb or other fingers; however you may apply two or 3 fingers sometimes with advantage- Feel the pulse in the patients right hand, with your left hand- and vice versa- Feel it in both arms when depletion is a doubtful remedy- let the arm be perfectly free from pressure.- Keep your fingers on the pulse for 20 ~~minutes~~ strokes; the chinese feel it for 49 strokes- hence their accuracy- where difficulty occurs in deciding, Keep silence- Shut your eyes &c.- Feel the pulse to know when to give opium, vomits, purges, Salyvation, or to use the Bath &c.- Indications from the force, not frequency of the pulse.- The pulse has been regular & even hard, in inflamitory diseases just before death. If I were to build a temple to medicine, there should be inscribed over the door "Let no man enter who is not acquainted with the pulse"

Novem: 18th. Lecture 6th. The natural state of the pulse during the first year, in children is 108 strokes in a minute.— The pulse is generally full and tense in proportion in proportion to its unfrequency.— Running increases the pulse to 150: but, if followed up, will prostrate it; or suffocate it, by compression.— The depressed pulse which occurs in pleurisies, is most frequent in those of Autumn. The Typhoid pulse is a medium between synochoid & Typhus.— The hectic pulse occurs in ~~Typhus~~ Phthysis, hectic gout, & fevers from ill conditioned ulcers.— Even in debility, without disease, people require medical aid.— The aneurysmatic pulse gives a verry jarring sensation— There has been an absence of pulse for hours and even days, without causing death.— Never apply blisters in the way of feeling the pulse;— if they should be so applied, you may obtain a correct idea of the state of vascular action from the temporal artery.

&c &c &c ——— ——— ———

November. 19th. Lecture 7th. Physiology is the doctrine of the animal functions in a healthy state – Animal life consists in motion, sensation, & thought. – Life may exist without thought or sensation: – The lowest state of life is an asphyxia. Every part of the body, except the hair and nails, is endowed with excitability, or irritability – It is of no consequence to us whether excitability be a quality or a substance. Tho' Girtanner supposes the latter, & that it is oxygene – It appears to be a unit – life is the effect of stimuli applied to the excitability – In the words of Dr. Brown it is a "forced state," but the idea is originally Dr. Cullens, tho' he afterwards renounced it – The human body is not an Automaton; its actions are caused by external agents – all the phenomenon of the human body; or rather animal economy, are the effects of stimuli upon the excitability – Impressions upon the body excite the mind and produce thought – Stimuli are

divided into external and internal — 1st. exter-
=nal stimuli. — 2d. Light. 2d. Sound — 3d. odors — 4 Air —
5th. heat — an uniform & active stimulus —
6th. exercise — 7th. the pleasure of the senses — The
internal stimuli are food; and its various
modifications after mastication; as the
chyle — The blood — secreted fluids, &c — The
mind is always passive in sound sleep, in
health — Dreams are to supply the place
of some deficient stimulus. Life is most
perfect at midday — It is not best to work
hard in the morning — Second part on ani=
=mal life — Disease depends, in part, upon
a disproportion between the excitability and
the excitement — (or stimuli) The absence of
one stimulus is supplied by the increas=
=ed action of the others. A diminution
of animal life takes place during sleep.
Artificial sleep from opium, & other dif=
=fusible stimuli, is the consequence of the
indirect debility which they induce. More
air phlogisticated in sleep than waking —
Sydenham visited sweating in plagues,

profusely, by covering the patient with bed cloaths and causing him to breath the same air for a while - aliment in the Stomach acts most powerfully dur-ing sleep - as well as urine - The feces act during sleep so as to occasion dreams; particularly in the morning when sleep is light. - Depressing passions cause night mare - Do not complain Gentlemen, when you are bestrode by this midnight hag; She kindly comes to prevent sudden death; by waking you! The excitability of children is so great, that far less degrees of the stimulus of heat will keep them as warm as adults. Irritability in children predominates over sensibility - so that they bear surgical opperations wonderfully - Crying and laugh-ter both contribute to the health of children: It is as possible for them to Cry & be fat - as to laugh & be fat - At the mid-dle stage of life, man is in his most perfect

physical state. Old age most subject to Cancers &c. because of the acrimony of the fluids in that stage of life: the wounds & sores of old people are most difficult to heal, from the same cause. An aged lady once asked a physician what was good for an old woman— he answered by saying— what is an old woman good for? But they do not survive their usefulness as often as men— This we see every day— . . . . Nov. 20th. Lecture 8th. Life is supported by stimuli— Irritability prevails over sensibility in old age— Life is supported in Idiots by the stimulus of the venereal appetite: and the numerous motions & gesticulations, &c which they perform. Life is sustained in asphyxia. by the excitability accumulating during the suspension of the vital functions; and thus becoming much more easily excitable— Dr. Rush thinks with Dr. Hunter, that if animation could be instantly suspended by means of cold, and the body kept in a proper temperature, it might

be preserved, and excited into life again at any future period.— Dr Rush knew a gen=
=tleman, who once died, to all appearance; but was sensible, and understood the discourse of those around him who were fixing the time for his interment. The horror of being buried alive had the effect of producing excitement, or life.— All animals require more or less air — food more or less stimulant:— They all posess more or less loco-motive power— Life and growth is supported in both animals & vegetables by stimu=
=li.— Seeds would never germinate while kept from the combined stimuli of heat and mois=
=ture.— Subduction of Stimuli will destroy life: Excess of Stimuli will destroy it— in this way malignant fever acts— Dr Rush then went on to compare the different states of life to those of a violin.— Death from old age is a gradual palsey— It begins at the eyes— Then the ears become paralyzed— then the limbs— back &c. The mind would never act if it were not excited by stimuli upon the senses. No innate ideas— but an innate capacity for the excitation of ideas by the application

of stimuli to the senses.— No little good in the brain to guide & conduct our actions, &c The mind is first excited by stimuli on the senses, which give rise to simple ideas— These ideas are combined into thought, or reflection.— The mind then becomes capable of volition, or willing the action of the body.— — — —

November 22nd. Lecture 9th. Animal heat is always the same in all temperatures: viz 96. Dr. Stevenson says it is owing to fermentation in the blood. This not the fact. Dr Sybere has clearly disproved it in his inaugural dissertation. Dr. Rush says there is no putrefaction in the blood, but there may be in the excretions. Another hypothesis is, that it is owing to the friction of the blood against the sides of the vessels:— This is also untrue another supposition refers it to the collision of the particles of the blood against each other: likewise false.— Chemistry has discovered the true cause of animal heat— Dr. Black led us to this knowledge. The same process goes on in our bodies during respiration, as in a Smiths fire during the blowing of the bellows. viz.

a decomposition of oxygene gas— The base of this gas is combined with the blood giving it its scarlet hue; while the carbon is set loose— The fine place of our bodies is the lungs— They depholgisticate a gallon of air in a minute— There have been some objections to this theory; but Dr. Rush does not think them of much weight— The various acids of the body as the Lithic, sebacic, &c. he thinks are formed by the oxygene obtained from the air. &c. Dr. Rush thinks the reason why animals become no warmer in high temperatures is, that the heat becomes latent by some means— People have been burnt, or their flesh decomposed, in bed without the least effect upon the cloaths, or even the stockings on their legs— these accidents have chiefly happened to drunkards & females— All animals die when deprived of air. The frog in the rock— Polypi form the connecting link between animals & vegitables— Heat nearly the same in all parts of the body— Inequality of heat is as much a disease as an inequality of excitement.— Heat one degree

less in sleep than waking. The use of heat is to preserve fluidity of the fluids; promote digestion, aid the senses &c Next in order comes respiration. — Motions are divided into voluntary, involuntary, and mixt. The only mixt motion is respiration. The origin of involuntary motion is the most abstruse question which ever engaged the attention of Physiologist. — Dr. Berkley supposes the first motion of the heart, at birth, to be voluntary — Dr. Rush is forced to reject this hypothesis. the hearts of chilarn who have had no brain have yet pulsated, — now, without brain there can be no mind, and without mind no volition — Dr. Rush knows of no other cause of the involuntary motion of the heart & arteries, than that those parts possess a greater share of excitability than the voluntary muscles, therefore more easily acted on by their contents — and thereby become habituated to action independant of the will. Respiration to be treated of tomorrow ___

November 23d Lecture 10th Respiration, is divided into two parts viz. Inspiration and expiration - Dr Cullen gives the best account of respiration in his physiology - The lungs have but little sensibility, & Stimulability: have most in the bronchæ. This want of sensibility, &c. is of great advantage to them. - Causes of respiration - an uneasy sensation at the breast - the stimulus of dephlogisticated air &c. Its uses are numerous - conveys pure air to the blood - opens a source of heat necessary to life - carries off vapours which might be injurious - Respiration is performed with most force, tho' not most frequency during sleep - Assists greatly in parturition, by causing the diaphragm to compress the Uterus. - It enables children to perform the delightful operation of sucking - when a child is in petticoats, a physician should not ask the sex: his own observation should teach him to discover - for the breasts of females move most in respiration: whereas in Males the abdominal muscles are most used - If cough suddenly

ceaces in consumption; and diarrhœa does not come on; death [redacted] soon ensues— Catarrh is always preceded by debility of the indirect kind— Sneezing is a proof of the crisis of catarrh— Laughter, when moderate, conduces to health— Tristram Shandy's dedication.— Hiccup occurs after excessive laughter, & in the last stage of some fevers— Physiology is to anatomy, what philosophy is to natural history. The organs of voice & speech act upon similar principles as a wind instrument.— Dr. Rush illustrated this by a copious comparison— Inflamation in the frontal sinuses renders the voice dull— The different motions of the Glottis are said to be 9632. The voice is divided into grave & acute, according to dilitation, or contraction, of the glottis— and weak or strong according to the force with which respiration is performed— the voice is modulated by the passions— Those who are commonly said to speak thro, the nose, do not, in fact, speak enough thro, it— the cavity of the nose is diminished—

paraphonia is a low whispering voice:— Aphonia a total absence of it.— Speech is wholy imitative. Dr. Rush knew 2 children in this city who did not acquire speech until the 8th. year— The knowledge of this fact will enable us to encourage the parents of children who are backward— The Larynx & Glottis are first used towards speech, in infants, as in crowing; and the tongue next as in crying dad. dad. &c. The lips are then used as in saying ma.—pa.—mama.—papa. &c. Physicians shou'd go into their Nurseries not only as parents but as philosophers: they shou'd observe nicely the evolutions of the mind in children. The ear & eye but chiefly the former, are the avenues by which children acquire speech— They shou'd be made to repeat hard words a dozen, or more times, or they will forget them— Language is divided into Gutteral, Lingual, & Labial— Savages & lazy people speak gutterally. That plethora of vowels in the Italian language appears to have been introduced by indolence & pure lazyness.

Philadelphiasm, or the pronouncing of beal-beal: white-vite, &c. may be cured by keeping the tongue against the teeth while speaking those words; & pressing the upper teeth & lower lip together — Ventriloquism is a deception — Those cheats speak during inspiration. Dr. Johnson says there are 40,000 words, and many have been added since his time, in the English language. — Man possesses many faculties in a much greater degree than brutes; but it is chiefly by the power of rational speaking that he is ennobled above the other animals of creation. — Novem: 24th Lecture 11th — circulation of the blood: the action of the auricles of the heart is synchronous; as likewise is that of the ventricles —. The heart excites the brain & is, in turn, excited by it. The arteries are strong in proportion as they recede from the heart: hence aneurisms form most frequently in the large arteries — veins the same — The heart is the first mover of the blood — It is excited by the stimulus of distension — vis insita — Can inflict

from the brain it derives a large portion of irritability - The Doctrine of oxygenated blood does not explain the action of the right ventricle & auricle. The quantity of blood in a middle sized man is computed at 25 lbs. This does away the objection of copious benefaction — The arteries are the primum vivens, & ultimum moriens of an animal. Uses of circulation - To support the brain - convey heat - fluids - & give tension to the nervous system.

Novem: 25 Lecture 12th. There will something remain unknown concerning the human body - To stimulate inquiry — physicians will, doubtless, one day, arrive at the knowledge of the functions of the brain: - I agree with my old master Dr. Cullen, who used to conclude his lecture on an abstruse subject, with dies docet — Vallis says the nerves terminate in the brain - Dr. Rush includes in the term nervous system - the brain & nerves muscles, tendons, & mind. - Ganglia are little brains - They interrupt the power

of the will over involuntary muscles – I shall neither adopt, nor reject the prevailing doctrines concerning the vital principals; which Girtanner supposes to be oxygene; some others electricity, &c. I suppose sensation & motion communicated by a matter — Sui generis; from the brain. The nerves & muscles possess a vis insita — I will here advance merely as conjecture, an idea that the nervous fluid is seperated in all parts of the body, but especially in the brain, by friction of the blood against the vessels – The vessels of the brain are remarkably flexuous – The vis insita is generally in the inverse ratio of sensibility. – In producing the motion of animal bodies, the following is the order – first impression, then sensation ensues; – the consequence of which is perception in the mind, exertion of volition, & finally motion – Sensation is simple & reflex – the former is confined to the nerves; & the latter extends to the brain; as when perception or volition is excited. – Impressions do not always produce sensation & motion: – never lose sight of the fact. – a continued impression on the

mind excites attention.— But one sensation can be excited in the mind at once.- This fact is of consiquence to remember- Souna whipping will counteract the bad effects of an over dose of opium. Impressions may be so strong as to destroy sensation:- as in some cases of malignant fever, the patient will feel no pain.- Habit has a great effect on sensi=bility. In some instances a continuation of impressions will excite more exquisite sensation:— as in that infamous punish=ment formerly used by the inquisition, of dropping water from a high ceiling on the bare scalp- Habit also renders the inhabitants of marshy countries in=sensible to miasmata- & even renders the stimulus of them necessary to health. An uncancious prosecution of an act, after it is commenced is performed by association. — —

Novem: 26th Lecture 13th. Effects of habit upon actions or irritability.- Motions in infants acquired by habit; as they are very irregular at first- active sympathy increases increases in proportion to the diminution of passive sympathy—

A young physician will feel more, and do less for his patient; whereas an old physician will feel less, & do more for him.— Walking is at first a voluntary motion; but it will be performed afterwards independant of the will.— Repetition increases strength; as it is said a man that lifts a calf every day will be able to lift it when a cow!! Repetition regulates nearly all our actions.— A knowledge of the laws of sympathy; or association, as Darwin calls it; is a desideratum in Medical Science.— The effects, or phenomena of sympathy, demonstrate the unity of the Nervous System. Sympathy is divided into contiguous; as the effects of shrill noises, such as wheeling a saw, upon the system— Delusive as the irritation of the Glans penis from stone in the bladder.— Continuous, as the intimation of the rectum, to stool, after eating; &c.
A case of delusive & continuous sympathy united, is when the nose is irritated by worms in the Stomach; The case of stone in the bladder is also one of this kind.

. Mutual affections of the Uterus & Rectum afford a case of contiguous sympathy. Evolution of strength; first in the back: next in the neck; then the arms, legs, muscles of locomotion, &c Children can always run before the can walk. A drunken man can run better than walk— Sick people acquire strength in the same order— The Senses— whole surface of the body capable of sensation. The brain is like a great city; the five senses are the avenues, or roads leading to it. Touch is a widely extended sence— wounds where the skin is thick, as the soles of the feet, or the palms of the hands often produce tetanus, than in more tender parts— The colours of nations, and of people, lie in the Rete mucosum. Hair powders dries the hair— Sensation much governed by the state of the arteries; always in proportion to the tension of the arteries of the part and of their number: As in the lips breasts of females, & genitals of both sexes— the fingers possess most capacity for discovering the properties of bodies; lips the next: but the brain must be wholly free from compression;

or even much impression to discern nicely.—
The sence of touch is most acute when all the other
senses are free from impression. hence the propriety
of silence & darkness in feeling the pulse.—
If we were devoid of the sense of touch, we
should not be able to distinguish the rosy
cheek of a pritty girl, from a cake of fire!!!
Horses stare at stumps stones &c. for the
want of this sence. Helvitius conceives
this sence to be the best and most general
mark of distinction between the human species
& other animals . . . .
Novem: 27th. Lecture 14th.— Taste is seated in
the tongue— the sense of taste is situated
exclusively in the tip & sides of the tongue.
The third branch of the fifth pair of nerves
are the particular of taste. on a dry tongue,
no taste can be excited— Dr. Reid supposes
that the sense of taste is effected by the
solution of the body applied, (dissolved in
the liquor of the tongue) acting upon the
nervous papillæ of the tongue. Dr. Rush
thinks this Theory approaches truth. Taste
may be transferd to another part of the mouth,
when the tongue is distroyed; as the sensation
of the Glans penis may be transferd to

the pubes, when that part is amputated. — Taste is not an independant sense. It is inseparably connected with smelling. The eyes aid taste. Taste directs us to the use of wholesome aliment. The objects of taste limited to seven: like the primitive colors. The varieties of this sense are occasioned by a mixture of primative objects. — Smelling the only difference betwen ~~smelling & taste~~ animals of acute smell & ~~other~~ the contrary Kind, lies in the size of the ossa spongiosa. Inspiration essential to the sense of smelling. It is rendered more acute by shutting the mouth. Three of the senses, seeing, hearing, & feeling, are mechanical: the other two taste & smell are chemical. Smelling assits taste. Odors are extremely diffusible. — Then why not infection? Elephants and Grey hounds possess the sense of smelling ~~most~~ in greatest perfection. The man who could follow his wifes tracks by the scent of her feet!! The Bramins possess this sense exquisitely. — They can not endure the odor of the perspiration of an European who has been long confined to animal food. They live exclusively

on vegetables.— Odors seven original, like colors & combined to produce the varieties— Smell transferable to the stomach, when lost in the nose— like taste to the other parts of the mouth. ——

Novem. 29th Lecture 15th. Smell continued— Some odors which are disagreeable when concentrated, become grateful when diffused, as musk &c. Some bodies of powerful odor, have but little taste— The gratefulness of odors as the rose, is increased by previously smelling some disagreeable substance as assafatida, &c. Odors loose their effects on the olfactory nerves by repetition; but probably a pite in sustaining animal life, notwithstanding.— Seeing differs from taste & smell, by being committed to two organs; as well as by being produced Mechanichally.— all animals have, at least, two eyes;— some have four, others six, & some others have eight. They are protected by the orbits, eyelides, eyebrows, &c. The eyeballs have, or are composed of six coats, which are devoid of fat— The eyes move in all directions with incomceivable velocity.—

The Conjunctiva is a continuation of the cuticle. — The Sclerotica, or white of the eye is a continuation of the pia mater — The Cornea is transparent in every eye — no nerves have been yet discovered in it. The Choroidea adheres to the Sclerotica by the ciliary circle — The uvea is co= =vered by a black pigment, which absorbs the straglins, or superflous rays of light — Pupil — The retina is a continuation of the optic nerve. — The Vitreous humour is situated in the posterior part of the eye. The Chrystaline lens is contained in a strong, elastic capsule, anterior to it. — The aqueous humor, anterior to all. — Light consists of seven differ= =ent species of rays, or primitive colors; which may be recollected the initials of those words; thus V. I. G. B. G. O. R. — standing for Violet, Indigo, Blue, Green, Yellow, Orange & red. — A body is white when it reflects all the rays. Black absorbs them all. — Transparent bodies reflect none they all pass through. — Refraction, is when the rays are broken by passing from one

medium to another of different density. the rays fall in different directions on the cornea are refracted by the humours; & the retina is the point where the rays meet & form vision. — the exact shape of the humors is necessary to complete vision — In children & in some adults, the eyes are so convex that the rays of light meet too soon, which renders them short sighted. — and in old people they become too flat to see objects which are very nigh. — A compleat eye can enable a person to read a clear middle-sized print about one foot distant. — the eyes accomodate themselves to the distance of objects — The pupil expands in the dark & vice versa. — The quantity of light necessary to vision is relative; as a person may be able to read, after awhile, where he could not distinguish the largest objects at first. Blue, or Grey eyes, are the natives of Northern climates: Black eyes of southern: thus their colour is adapted to the quantity of light they are destined to receive. —

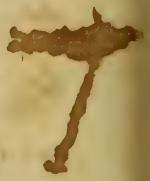
The figures of objects are inverted in the eye; but the mind receives a just idea of their position by attending to the first impression.—See Potterfield on theeye—
Two impressions of equal force cause but one sensation.— The right eye is chiefly used in vision.— Why does light & darkness affect the eyes? Light is a stimulus which causes the pupil to contract—when it is abstracted the pupil dilates.—
Looking at a piece of black cloath an hour or two before you go to see the favorite of your heart will render the eyes finely languishing; & perhaps enable them to do execution!!—
Green is the middle color & most universal.
Avoid reading while on your back, also avoid reading perpendicularly downward. Receive the light from behind, or side=ways. Never read with excessive, or scanty light. Nor always the same sized point. Avoid pressing the eyes in washing the face— Use Spectacles as soon as vision

begins to fail - Seeing is the most noble sense - Whence is the mirror of the soul, & the master peice of nature!!!!

November 30th. Lecture 16th - Hearing - Sound consists of certain ~~vibrations~~ vibrations ~~occasioned by vocal &c. pairs occasioned by speaker~~ in the air which excite sensation in the mind. - Sound is applied to those vibrations occasioned by speech &c. Noise to those occasioned by the concussion of bodies; or the explosion of gun powder &c. The Earth, air, & water are the media of sounds. Bodies are sonorous in proportion as they are tense - Grave sounds ~~descending~~ becomes acute; & acute sounds upon elevation becomes grave - The more vibrations in a given space the more acute the sound & vice versa. - A sound to be audible, must consist of at least 30 vibrations in a second. - A distinction is made between acuteness & intensity of tone. Dr. Franklins harmonica was constructed with Glass tumblers ~~by~~

~~nothing~~ which emit sounds by rubbing the ledges. Length & a small degree of tension of sonorous chords, emit grave sounds; but, while short, tense cords emit acute sounds. - The presence of air is necessary to the production of sound; - a bell will not produce sound when struck in a vacuum. - The angle of the reflection of sound is equal to the angle of Incidence.

The Ear is divided into 3 parts; Meatus auditorius externus, Tympanum & Labyrinth. - The projection of the ear aids sound. - The membrana Tympana is nearly horizontal with the earth; because sounds chiefly come from below - Hearing continues sometimes, after the rupture of the membrane Tympana. The portio mollis of the seventh pair of nerves goes to the cochlea of the ear; which [cochlea] is to that organ what the retina is to the eye. Sound is the raw material of which speech is manufactured in the



cochlea.— Hearing is rendered dull in children by a quantity of mucus — which is wisely provided to defend their tender organs.— We learn the direction & nature of sounds by experience only. Hearing is dependent on, or is aided by, the nose, the eyes, & the mouth.— It is more acute when respiration is suspended — Hearing is transferable to every part of the body;— Haau[redacted] Boerhaave could distinguish sounds by his feet, after he had lost the sense of hearing. A young Lady in Germany discovered the tune her sister was playing on Harpsicord, by resting her teeth on it, after she had become totally deaf.— A certain lady could discern the noise a pin made in running thro' paper, when she could not hear the firing of artillary.— The ear is the sole judge & regulator of sound— Hence deaf people are apt to speak lower or higher than usual— The mind receives but one sensation from 2 impressions on the

ear.— Harmony & melody— The latter con=
=sist of agreeable succession of notes referable
to the Gamut: Harmony consists of agree=
=able combinations of tones. Darwin!— The
song of birds is entirely melodious.— The
taste for melody is universal; as every
one admires the singing of birds— Hear=
=ing is next to vision in importance.—
The senses are the avenues of thought.—
Without them we should be below the
brute creation— Like logs & stones.
Ideas are the offspring of previous sensation.
December 1st. Lecture 17th— Philosophers
have had various notions concerning the
operations & nature of the mind. The
Senses are often deceived by not subject=
=ing bodies to all, or several of the Senses—
The senses are liable to falacy from
disease.— Always bear in mind the depen=
dance of the senses on each other.— Ghosts
& Spirits have existed merely because cer=
=tain phenomena were not subjected
to the inspection of more than one or at
most two senses no person ever felt a

Ghost; yet if they were visible, they must be tangible. The noise of window-shutters in a windy night, has often past for Ghosts:— The reason was they were not subjected to the other senses;— Never believe in apparitions, Gentlemen, untill you feel them! Some have laid great stress on the efficacy of observation in acquiring Knowledge:— others have depended solely on reason in order to arrive at correct information:— while a third set cry down every thing but experiment. But observation, reason & experiment, combined are necessary to form a correct judgement.— The mind acts, and is acted on, as mechanically as the senses. Without a Knowledge of the opperations of the mind let no man enter the cell of a maniac; or the room of a persona in a delirium as Physician, for if it can be avoided as a nurse;— one class of Philosophers has supposed the mind to be immaterial; and that it totally independant of the body. a 2d. that it is an exquisitly fine &

subteliged (something) matter.— but intimately connected with the organization of the body. while a 3d. asserts that there is no such independant of the body; but that it is the effect of external agents upon the brain through the medium of the ~~brain~~ senses. Atheists. Deists. Theists &c. Dr. Priestly is at the head of a set who suppose the soul undergoes a temporary death but will be raised again at the last day with an incorruptable body. These doctrines let which will be right do not effect the laws of stimuli & excitability.— There is no necessary connection between the mind & body. The Deity can effect his purposes without our being able to compre = hend the laws by which they are effect = ed. The bible is not a Metaphysical work; it is a code ~~of laws~~ of rules & regulations for mortals to act by— all this does not affect the Christian ~~religion~~ Religion.— The body first acts upon the mind I mean all its faculties. The faculties of the mind, are,

Memory, Understanding, Imagination Will, Passions, Moral Faculties Sense of Deity, & Conscience.— Dr. Rush supposes a motion takes place in the brain at every action of that viscus, similar to that of the mouth & lips in speaking; or rather upon the same principle.— A definite, fix.d appperation for every Idea, or thought.— A small motion takes place in the nerves upon the slightest sensation. If I were permitted to coin words, I would have a vis Insita, a vis nervea, a vis sensoria, & a vis mentalis; expressive of the powers of different parts. These motions, or powers are excited by the various external & internal Stimuli.— Animals whose hearts are nearest the brain have most mind.— The brains of Infants too soft & tender to convey motion; those of old people too hard. Size & density of brain govern its powers.— December 2.d Lecture 18.th Fallacy of relying on a part of the senses— or on the senses apart from

reason – or of relying on reason without consulting the senses.– Memory – is one of the noblest faculties of the mind.. The power of recalling objects to the mind.– Reminiscence – is a recollection of object past, by a fresh application.– it exists in some brutes, & in Childr^n under one year of age – Improvement & extent of memory depends on civilization Savages possess it in a low degree: some nations cannot count more than 3 – There are 5 species of memory viz. 1. for words 1 for names, 1 for things or objects 1 for numbers & 1 for Ideas. each possessing a seperate portion of brain.– Tho^s Fuller a negro had a remarkable strong memory for numbers Memory of Ideas the noblest of the whole. It distinguishes philosophers & men of knowledge from men of mere learning — Immagination differs from memory in embracing future as well as past events. Memory may be compared to his tory. Immagination to painting a picture

or Camera obscura. Memory like a ship with oars— Immagination like one under sail— Immagination is the Columbus of the mind.— an essential ingredient in genius— It differs from fancy— all the Faculties form what is call'd the human understanding— The other faculties are the Materials, which the understanding like a skillful workman builds up into to a stately fabrick.— The Will is the faculty by which we reject or choose objects— has 2 seats— volentas facit peccatum.— passions are to the mind what the senses are to the body— propensities— desires— emotions & affections— The moral faculty is in the will— Conscience in the understanding— Sense of Deity distinguishes man from brutes— Moral faculty is the governor of actions— conscience the judge of them.— Speculative truth & error are the objects of the rational faculty. Good & Evil are the objects of the

Moral Faculty. — Queries — may there not be quiescent faculties — & may not those faculties — be excita at some future day, to perfect our happi= = ness? The mind has been compa = red to a well organized government — Memory & Imagination are the haiuse of representatives — Under = standing is the Senate — The Will is the supreme executive — Moral Faculty the judiciary — Conscience the high court of Errors & appeals. December 3d. Lecture 19th. — opperations of the faculties of the mind — percep = = tion — association, Judgement, & Rea = = son. — Volition is likewise a faculty, but modified. — All sensations when conveyed to the brain excite perception a change is produced in the mind by perception, call'd Idea. Ideas are the Images of real objects. — Dr. Berkly supposed there was nothing in nature but Spirit that what appeared matter

to us, was merely Ideal. — Buffon denied that there was any spiritual, but that all was matter. even mind he thought was wholy material. Hume asserted there was neither spirit nor matter in existence; that all was phantom!!! The human mind may be considered as composed of 2 parts — Ideas & Notions or Thoughts. Idea is a quality as much as sound. The revival of Ideas is performed by association. — Thoughts appear to be the effect of motion in the brain, excited by external & internal stimuli; Thought, therefor, is a quality. Ideas are simple perceptions — Thoughts are the combination of those materials. — Association is an apperation of all the faculties of the mind. — It is the same thing in the brain as sympathy is in the nerves & muscular system. Without this apperation, we should be unable to judge of any subject. — When we think of a great General & an usurper, we associate with those Ideas the name of Bounaparte — Most of our pleasures & pains are owing to this power of association. Genius consists in part, in dissolving wrong associations, and effecting true ones — Association is assisted by pleasure & pain. We feel pleasure & pain

many a time, by association, without being sensible of the cause — as is often & indeed generally the case with Hypochondriacs. Sounds, Letters, Words &c. produce association — The word Blood always produced fainting in a Gentleman of Liverpool. Alex. Alexander by this power, was long known by the name of paint-no-paint. — Association of ties, of Consanguinity, &c. is often of great consequence for physicians to be acquainted with. Judgement is formed by a comparison of ideas; thereby enabling an inference. Reason consists in selecting single propositions formed by judgement, & deducing truth. It would be more proper to call reason Induction. A person may possess judgement without reasoning powers — Genius travels on the wings of the wind: Reason travels on foot. Reason & common sense different. — Common sense consists of opinions and feelings in unison with the majority. —. Reason belongs exclusively to mankind. — Taste is a faculty of the mind. Passions affect the mind both morally & immorally; that is whichever way the mind inclines they cause it to act with more vigor. Reflection contemplation & Attention. The Miser attention to his money — A man of moderate talents may reflect — But the mass of

genuine abilities alone can contemplate.
Wit — is composed of or consists in, a set of ideas which are peculiarly apposite — or the contrary. — Laughter is chiefly excited by incongruity. — Operations of the will. — But one action can be performed with consciousness at once. — A woman can walk, talk, & knit at the same time; yet but one of these actions is performed with consciousness at once — the others are performed by association. All the acts of the will are the effects of motives applied to the mind. — There would be no more will without motive, than life without stimuli. Free agency & necessity alike true — The new born infant, a germ of sleeping mind — A sense of Duty appears in children at about the 5th year. Imagination seldom acts in children before the 12th or 13th year. — The memory is the faculty which fails first. — Imagination & understanding next — The moral sense & sense of Duty generally increases with age. The faculties often decay, or rust from want of use than they are worn out. —
December 4th. Lecture 20th. Second thoughts are best in the rational faculties — first thoughts are best in the moral faculties

Intuition is but a rapid operation of the rational faculties.— Ideas are the effects of certain motions excited in the brain. therfore a quality.— and cannot be recall, but by the same motion again excited, either by the object or by the memory.— Association appear to be involuntary. A thread on the finger, often brings back the association of tying it.— Reason takes certain propositions, combines, seperates, compares them, & deduces a truth from them.— Taste supposed to be a faculty by some— by others an operation of the faculties— If it be a faculty it is something similar to the Moral faculty.— Reflection is confined to single objects— Contemplation extends to a variety.— Pleasures of the senses, & mind— pain appears to be the natural state of man, since his fall— pleasure being artificial, or the effect of stimuli upon the excitability.— Absence of pleasure is pain: & the Absence of Stimuli is death.— Pleasure greatest in civalized life, as there is most sensibility.— Savages have pain for want of sensibility.

hence they have mirth but no pleasure
They have an habitually sour countenance.—
Pleasure of the sense of touch, is greatest in
perfect health, this sense is much disordered
in some diseases.— The pleasure of touch is
greatest in the propegation of the Species.—
Next greatest is kissing a sweet pritty Girl
next holding & squeezing her soft hand, &c.
When Gentleman has the liberty of playing
with his sweatheart's hand, he has made con-
=siderable progress in the Courtship— at
least a good beginning. A second pleasure is
from the temperature of the air, as in
Italy— as spring in England. June in America
Dr R. has observed, has afforded very agreable
sensations— a 3d. pleasure is from breathing
dephlogisticated, or oxgene air— a 4th pleasure
of the sense of touch, is from the warm
Bath.— 5th. from the action of walking
after long rest— riding— sailing— hunting—
Dr supposes suppose the pleasure from hunt-
=ing arises from the risk which they escape—
& perhaps the yell of hounds.— The Citezen who
went a hunting could not hear the hounds,
for the damned dogs barking!!— Sailing
in a baloon quickens the pulse 4 strokes

in a minute— may be used as a remedy at some future day.— 6th. pleasure from the action of some medecines; & aliment, on the alimentary canal.— 7th Sudden relief from pain: as Cholick, or labor.— Pain aids the memory— as whipping when plant=ing a land mark, &c. 10th. Rest after fatague, &c & Hermaphrodite sensation is felt in tickling, sleyhing &c. that a mixture of pain and pleasure. one more the bodily pleasure of dying. Butler who died Nov. 4th 1791— said it was not so hard to die; but like going to sleep. Hunter wished for a pen & Ink to record the pleasure of dying!!

The sense of touch is confined to the fingers: that is the accurate sense of the properties of bodies. There is a great pleasure in feeling the skin of Children of 9 or 10 months old.— Dec. 6th Lecture 21st— It is difficult to draw the line of distinction, between the mind of man & brutes.— Man is a social animal— so are some brutes.

Man is said to differ from brutes, by anticipating; the Indians do not anticipate.— Man is progessive in knowledge; so are brutes as the Learned pig &c. Brutes, however, do not possess the sense of touch:— the are unable to acquire a knowlege of tools &c. &c to speak rationally.— They are governed by present pleasures & pains; they cannot abstract ideas.— have no sence of deity. Man is as much a religeous as a social animal:— Brutes were never known to pray. The most confirmd Atheist, when suddenly taken with violent pain, will call upon the Deity with the utmost vehemence. The pleasures of taste.— If man were only calld to eat, because it was necessary to his existence, he would often permit other things to interfere; but he is impelled to that important, life preserving process by another powerfull incentive, viz. the pleasures of the sense of taste. This opperation is calld for by two prompters, Hunger & Habit.— The objects of this sence are extremely numerous. High seasoned or delicious alimement soon palls

the appetite;- but that of an insipid nature as bread, &c we relish all our lives. It is probable there remain many new pleasures of taste to be discovered. Diseases have often been suddenly cured by indulging the patient in that for which he longed.— as water mush & milk &c. not by any peculiar virtue in the object longed for, but by the pleasure it excites on the sense of taste. pleasures of smelling. Every mead, every plain, & every grove is tributary to this pleasures of this sence. the rose stands first on the list of pleasant odors; perhaps the sweet scented shrub next. It is a compound of strawberry & pine apple. The pleasure from odors is increased by mixture.- By dew as flowers are most fragrant in the morning.- The odors of flowers is improved by domestication, or being transplanted; but their exquisite hues are impaired by it. just so with birds: their plumage is injured by confinement, but their melody improved.

Taste is liable to perversion – as it evinced by the use of Tobacco, asafoetida, &c. the smell of flowers, &c. is medicinal; which constitutes an advantage of country air to convalescents. The sence of taste is increased by diminishing the other senses. + Where shall we find language to describe the pleasures afforded us by the eye? different degrees of light afford different degrees of pleasure. – The color of objects is pleasing. children & savages, select a peice of gold – first: next silver &c. The figure of objects affects the pleasure of the sight. Rounded objects are most pleasing. – Hoggarths line of beauty is curved. Man the best curved animal. Therefore the handsomest. A horse is said to be the next in beauty – We have an innate admiration for rotundity – Motion affords pleasure to the eye – Motions should be slow to be graceful. – Sublime objects give pleasure as a volcano, a ~~[illegible]~~ cataract &c. Contrasts afford pleasure: Hence in a wilderness, a garden should be regularly

laid out; & in a City it should be irregu-
=lar, & like a wilderness. - Pleasures of
hearing. We are surrounded by this pleasure,
first our mothers voice; afterwards the voices
of our fellow-creatures:- the music of birds;
the noise of quadrupeds;- of Insects; of Rivers;
dropping rain; purling rills; &c. -pleasure
or good predominates greatly over ~~us~~
pain, or evil. The p Enjoyment of the
pleasures of the senses, are nearly equal in
all ranks- While the monarch is delight-
=ed with the concert, the Clown is ra-
=vished with the thrumming of a Banjar.
The Rose smells as pleasantly to the milk
maid, when she is dress'd up in her duds
of a Sunday morning, as it does to a Princess.
The pleasures of taste and smell are of the
shortest duration. To heighten pleasure,
Louis XV. used to unite a bed of roses, a
concert of music, & coition! but they are
discordant- We can attend but to one thing
at once. - proximate cause of pleasure
motion is essential to pleasure - pleasure con-
=~ ~, drink, is ~ ,,

=sists in a certain limited definite motion; and a regular order of the impressions which excitia those motions or impressions which cause pain — a high degree of distinction produces pain: a less degree - pleasure. — violent stimuli produce pain; - less violent or moderate stimuli give plea = sure. — a large dose of opium, Spirits &c give horrid sensations; while a certain quantity of those substances afford the most exhilerating. — pleasure & pain are therefore different degrees of the same thing - which is motion. —

December 7th Lecture 22d pleasure is a mere quality. - Weak impressions become acute, as water dropping on the scalp; while strong ones become weak by repetition. Hence the reason why disagreeable im= =pressions become agreeable by habit. — pleasure like pain is lessened by duration. Opium alleviates pain only by being a stronger stimulus than the cause which produces the pain. Final cause of pleasure is to impel us to eat, drink, exercise, propa=

=gate our species, &c. &c, pleasures are so nearly related to pain, (being only different degrees of the same thing) that they often termi=
=nate in pain.— pleasures of the mind. They are of two kinds; the pleasures of exercising our own faculties; & of observing the operations of the mind in others.— First of our own faculties:— The pleasures of memory. By means of this faculty, we live, as it were, our lives over again.— We enjoy plea=
=sure over & over again by recollection. Even the remembrance of pain, by repeti=
=tion reduces the mind to the pleasure=
=able point.— pleasures of the Imagina=
=tion. By this faculty, we enjoy every thing desirable: We can command legions & build castles in the air!— pleasures of the Understanding.— these are derived from a variety of sources; as the discovery of truth &c.— pleasures of that faculty or opperation of the mind call'd taste. They are very exqui=
=site; as in viewing the beauties of nature & art.— pleasures of the will consist in

the freedom of willing & acting. The pleasures of the moral faculty. — It would require a pen made of a quill, plucked from an angels wing, to describe these pleasures!!! perversion of the Moral faculties; we see this in the pleasure some people take in cruelty, &c. — A *Man, (and O, shame a native of America) once declared that the most delightful music to his ears he ever experienced was the noise of the Guillotine decapitating 20 or 30 persons!!! — pleasures of Agriculture (all the other pleasures combine to make these) The War worn soldier, & the Sea beaten Mariner center their hopes in the prospect of ending their days on a farm. — pleasures derived from the exercise of the mental faculties in other people. — These consist in hearing ora= =tions &c. &c. — proximate cause of mental pleasure. — The mental faculties act upon every part of the System. — The prox= =imate cause of mental pleasure, is an equa= =ble, moderate distension of the brain. —

* It must have been a Beast & the production of France

Mental pain is owing to too great a distension:- But it becomes agreeable by habit.- An ugly woman when once loved, is loved harder than a handsome one! Certain studies at first disagreeable become agreeable by habit.- Is it likely that such a complicated ~~habit~~ fabric as the human body was only designed to support us through the short period of human existence? Certainly not.- It was designed to mature & ennoble our immortal part, by affording wisdom & knowledge!

December 8th. Lecture 23d. Mind transferable to other parts when the brain is wanting- like the senses when their organs are deficient- Mind is supposed to be transfer'd to the medulla oblongata or Spinalis.- Sensation & thought repose themselves in sleep, like muscular motion in rest.- Sleep in one respect a tendency to death: consists in that point of debility, happily call'd by Dr. Brown the "Sleeping point" Excitability is not a fluid- which is wasted to procure sleep, for sleep may be induced at any time.

Sleep throws the Excitability of unexercised parts to those where it is worn out by exercise. By this means it has a tendency to life.— Cold feet & headache at night are removed during sleep.— Causes which induce sleep— are either Indirect or Direct. Indirectly sleep is induced by Labor, when it is very agreeable.— Large Meals, Liquors, opiates &c. certain sounds Heat after exposure to cold— Long exercise of mind, &c. these stimuli induce sleep by reducing the excitability. Remote cause by abstracting stimuli— as evacuations— Oil on the skin— cold— Venery— cessation of pain— Sedative passions as Despair— Hence the disciples of our saviour slept during his crucifixion.— When the system is below the sleeping point, walking, riding, eating. Small doses of Opium, &c. raise the excitement to the sleeping point— Same sounds warmth as pediluvium.— Asafatida pills have induced sleep when opium failed— certain acts of the mind, which are similar & dull as counting 100 Backwards— Light of morning & in the night a small taper have often produced sleep— These

Stimuli should act equably — Sleep begins by a pricking of the eyelids — difficulty of keeping them open & debility — Stupor. Starting in sleep is owing to the too sudden abstraction of Stimuli. — abstraction of sensation & voluntary motion 1st take place 2d. we loose acts irritability &c. Involuntary motions slower in sleep — pulse slower & fuller in sleep — perhaps the heat of the bed cloaths help to make the pulse fuller. As well as the straglng excitability of the muscles concerned in the arteries. — peristaltic motion of the Intestines lessened during sleep all the secretions increased, & excretions decreased in sleep — Hence great sleepers become fat. The heat of the body is diminished during sleep: — according to Hunter & Rush but increased according to Darwin. — The System is weaker in sleep — Hence gout & fever attack during that period. Children sleep much more than adults. Old people sleep little — 8 hours are long enough to sleep. Longer injurious. — Few men have been distinguished who were great sleepers. Term of sleep is formed by association —. A Man once slept 14 days & nights, & on

waking thought he had slept but a few hours- We awake more suddenly than fall asleep- Moral faculty greatest in the morning- therefore always make bargains before Breakfast- Morning productions better than those which smell of the Midnight Lamp.- The bodily strength weakest in the morning- courage lies in the morning direct debi = lity then predominates- Invalids should never travel before breakfast- nor till 9 or 10 oClock- Some old people have said they slept none, & were yet well- but they do sleep- they wake unconsciously- like going to sleep.- Cause of Dreams. they depend upon imperfect sleep- or partial excite = ment- Imagination is more busy then than any other faculty.- Collapse of that part of the Brain which is the seat of a faculty, occasions dreams, which, to that faculty are absurd.- Mental taste also suffers.- We never dream of any thing the materials of which were not [illegible] previously in the mind.- Nihil est intellectu quod non prius fuit in sen = su.- Dormant ideas are often revived in sleep by association.- Some are recol-

= lected afterwards - some are not - Images are more vivid in sleep than waking - owing to the abstraction of other stimuli. - The Will is more powerful in sleep - as in sleep. the emissio seminis. - Do we always dream? - Labourers dream but little - Mr Stuart never dreamt after living wholy on vegetables. - Locke thinks the mind sleeps. we sometimes dream without recollecting it - we sometimes recollect dreams by association during wakefulness - & during sleep we sometimes revive former ideas; & that by the same power - Dr Rush agrees with Mr. Locke; & also believes that dreams are morbid phenomena. - Old men dream a great deal - a full or empty stomach - full bladder &c cause dreams. - we dream most in the morning - When we fix an hour to wake we are wakened by the stimulus of the thought. -

December 9th Lecture 24th. Suppose the sleeping point to be at 20: - when the excitement is above or below the sleeping point, sleep cannot take place. - When it is above this, -

the remote causes are the abstraction of Stimuli; - when below, they consist in the application of Stimuli, which raise the excitement to the sleeping point. - We wake at any hour we fix upon probably, by the memory not compleatly subsiding - some people particularly old ones, have related stories for facts, which they undoubtedly dreamt; by not being able to distinguish them from reality - Hunger produces dreams about eating an Irish Minister who talked much in his sleep, once lay with a boy who ran a pin in his back; this enabled him to form a correct idea of a passage in scripture, which he did not, perhaps, understand before - for he exclaimed "Oh now I understand what Paul ment by a Thorn in the flesh"! -

Somnambulists forget what they say or do in their sleep - so do drunkards, during intoxication. - - We cannot recollect ideas when too great solicitude, or excitement exists, but when it is lowered to that point at which the memory can act, we recollect

them. When the excitement is not high enough, a walk, a glass of wine, conversation &c will do it — Lovers do not dream of one another, except at the beginning or declension of passion; for during the height of it, the excitement is worn down so in the day, that none remains for night. — Dreams are not supernatural: if they were they would be for the good of mankind; & Generals & Statesmen &c would dream the most; whereas they scarcely ever dream; - while every old woman is presaging the fate of a cream jug or pitcher by her dreams!! —

A disagreable dream indicates incipient disease; therefore the patient should use gentle exercise, temperance, evacuations, &c.

The final cause of sleep — is the recruiting the powers of the body & mind. — Pain is relieved by a recumbent posture. Passions will subside in a recumbent posture: — therefore a fellow should always go to bed when he gets in a rage! Dreams contribute to support animal life. — —

Aliment. Man is a carnivorous & phytivo=rous animal; — the conformation of the parts subservient to nourishment prove this, as well as his being unable to preserve health and strength without it. It is not bar=barous to kill animals for our support; It is doing a kindness to them. — pre=vents them from dying with disease. It allows them all to live a time: whereas they could not, if allowed to multiply as fast as nature prompted; for the earth would be over-run. — By this permission to live their term, they enjoy the animal pleasures; and to a greater degree than Man; because enjoying fewer they are greater in pro=portion. — December 10th. Lecture 25th. Relative salubrity of Aliments, — is a subject much connected with Therapeu=tics: — A moderate use of agreeable diet, if the stomach will bear it, is always wholesome. The appetite & stomach ought

always to be in unison; for if aliment, however agreeable, do not agree with the stomach, it is unwholesome. — Wholesome substances, tho, disagreeable, should be taken; as some medecines &c. Aliment, in this county, is generally taken 3 or 4 times a day. — I suspect men like Horses, should eat constantly; or at least, often and but little at a time. — A small portion of aliment constantly in the stomach is most consistant with propriety: during long intervals between meals, Tobacco & Spirits are used as stimuli to supply the place of food; and after excessive meals, which induce indirect debility, those Stimuli are likewise used to keep up the excitement; the Evening is the best time to eat a full meal. Rest should not be taken horizontally after a redundant dinner. Sleeping in a chair is not good neither; for the head goes awry and occasions headachs, &c. A Semi-recumbent is the best.

Lying down after dinner is a bad practice. Taking spirits & bitters before meals, is injurious.— A small portion of some solid aliment, as raisins, biscuit, &c. is much better.— It is not good to dilute the food by too much liquid of any kind. From half a pint, to a pint, and that at the end, or latter part of the meal, is quite sufficient.— after exercise, it is injurious to struggle half an hour at carving a tough Fowl— Those animals should be cut up before they are brought to Table. Drinking Healths is a bad practice at meal times; It interupts all at Table, and causes some to swallow their food without masticating it; or perhaps shock them in attempting to swallow it, in order to thank the one who drinks to their very good health!! It also spoils the relish for aliment by distracting the attention Eating should be done in Silence. Aliment is divided into animal, & vegetable.

The wholesomeness of food depends upon its solubility in the stomach; & do its nutritious qualities. The solubility of aliment animal depends upon the sex of the Animal the flesh of females is most soluble. That of males castrated, the next. Animals which have been fatted slowly, have the most soluble flesh. The practice of chasing or baiting animals, renders their flesh more soluble in the stomach. Some flesh is rendered more soluble by being kept a while but pig, goose, & duck, aught to be eaten the day after they were kill'd; especially in warm weather. Solubility also depends upon the meat being thoroughly cooked. ~~Especially~~ likewise upon the suddeness of the death of the animal, as by electricity. Keeping the entrails in fowls hastens putrefaction; & gives a disagreeable odour to the flesh. putrefaction does not generate animalcula. Soup is the most wholesome aliment.

It should be the first dish— it damps the appetite, & prevents excess in eating— broths should be made slowly— kept near the boiling point— say 200°. Kep the pot or vessel very lightly covered.— We ought always to direct how animal food should be cooked for sick peo= =ple.— It should generally be Boiled; roasted meat is more stimulating; and therefore suitable when Tonics are re= =quired.— Peg Mullen, the famous beef steak roaster— roasted them on a smooth iron, which made them remarkably tender, & retained all their juices— The crust of meat pies gene= =rally disagree with the stomachs of the sick— this is abviated by making the paste one half of potatoes the other half of flour.— Stewed meat is more nutri= =tious than boiled— for it does not part with its juices so much.—

Fried meats are not easily digestable. Meat cooked in a vapour is very good. Fish is an intermediate aliment between Animal & Vegetable. very proper for Invalids, & Convalescents after acute diseases. Oysters are easiest digested when eaten raw, or warmed before the fire. The flesh of land Animals should not be eaten with fish. they disagree except the former be salted. Fish are said to favour procreation; but it is the exercise of the Fishermen, not their food which is so favorable to multiplication. During Lent the people used to live wholly on Fish; This practice ought not to have been laid aside; for it was held at the time when land Animals were propagating their species, and were unfit to eat. The nutritive qualities of Animals are various. Quadrupeds possess most

nourishment.- Birds meat. Fishes meat.- Amphibious animals flesh.- and Insects meat. Eggs are of a compound nature.- The Yelk of animal, the Albumen of a vegetable nature.- Sound Eggs have always a warm smell discernable by the Sanguis.- Yelk is most soluble hence most proper for weak Stomachs.- Vegetable food constitutes the greatest part of the food of mankind.- vegetables should be boiled a great deal. Sharp Cabbages is best when boiled about 10 Minutes.- It should not be Boiled with meat.- Milk constitutes the food of all for the first 12 or 15 Months.- with our food we use condiments. Salt all children like it. A Teaspoonful of salt after a full meal would be better than any dram. Vinegar is very good. In summer our food should be well spiced.- Mustard & horseradish should be used moderate

=by- they impair the tone of the Stomach when used in large quantity.- December 11th Lecture 26th Methods of preserving Meats drying them in the air or sun- by freezing- by smoke- in Molasses &c. & by common salt. Meat is best preserved by applying Salt to it when warm with life. Salt meat is more wholesome than fresh in Summer- There are 2 good methods of preserving hams- viz in cut straw, & in seperate Bags.- there is another method of keeping meat in the stale of Portable Soup. Aliments are nourishing in proportion to the Sugar the contain. We can eat more potato than Parsnip because the latter contains more nourishment.— Pork is more nourishing than Beef because it contains more oil.- The nourishment a substance contains, is in proportion to the quantity of Sugar & oil.- The quantity of Aliment necessary in a day for one

passes is different in different people— Old men require more than middle-aged.— We require more food in Winter than in Summer to keep up the excitement. The quality also, of food must regulate the quantity.— We require twice as much Vegetable as Animal food:— 8 lbs is more than Men require in a day.— The stimulus of disease, thirsting &c. supplies the place of food.— It has been disputed whether food should be taken warm or cold— Warm food is the best— Tea & Coffee contain no nourishment, except the Sugar & Cream which is blended with them— but they exert a stimulus in another way— They gently stimulate the whole System thro' the Medium of the Brain & Nerves— Coffee acts primarily on the Brain. Tea on the Nerves & Muscles Both fine stimuli— They prevent gluttony & Sottishness— Dr Johnson—. They are good after great fatigue of body & of mind— after great meals intemperate

drinking— taking opium— good in grief &c. They should be made pretty strong.— coffee is better than Tea to procure watch=fulness— it keeps us tranquil while tea affects the nerves— Strong coffee aids the System against cold— coffee should be well dried, & moderately roas=ted,— and bruised instead of ground— it is more cordial when drank without sugar or cream— Tea has been said to be a slow poison— Anthony Benezet, the Father of ^ being told this, replied "It is indeed a slow poison; for I have been in the habit of drinking it twice a day these 50 years, & am alive yet!" Drinks— fermented, & distill.d— Sweet wines are most nourishing— red wines are least nourishing— white wines are best for the people of U. S.— are more stimulating, &c— Malt liquors abound in saccharine matter— it is good for laborers but not for sedentary peo=ple— Porter is the best malt liquor— because it is older before it is used than

others — always prescribe Porter for sick peo=
=ple when malt liquor is proper — Cyder
is good for laborers — but causes gout &
Rheumatism in the sedentary — It is im=
=proved by boiling — when 4 years old it
is nearly as good as Wine — Distill.d or Spiri=
=tous liquors are bad — contain no nou=
=rishment — A thousand Tongues could
not escaust the catalogue of their baneful
effects in every country! They are best
or rather least hurtful in the form of
punch — Water is the most salubrious
drink in every age & in every clime —
are we dry? water is the best to quench
thirst — are we feverish? water is the
best to cool it — are we just emerging
from a drunken prolick, oppress.d with
nausea, &c.? water is the best drink to
allay the sickness — This healthful &
copious fluid seldom fails to ensure
health & longevety — Cause of appetite —
Boerhaave ascribes it to biliated bile &
gastric juice — but commonly appetite is excit

Digestion performed By heat & Solution

The Dr. has changed his opinion of the Howa performing digestion by trituration — says the mechanical force which it erts is very small —

=ted in a certain degree of relaxation of the stomach; which is the hungry point — below this is anorexia — hungar has great influence on the mind, Morals, &c. it causes Men to kill & eat each other, &c. When the Sto= =mach is below the hungry point, cheerful company, & other stimuli, raise it to it — appetite is increased by high & dry situations — May be [redacted] suspended by opium, Tobacco, &c. It may be also suspended by stimulating passions, or impressions — Moses on the Mount — Some Animals suspend the appetite by swallowing balls of resin, or moss — Where is the seat of thirst? When drink cannot be had, thirst may be suspended by washing the fauces with acid. — December 13th. Lecture 39th. — Food is seldom swallowed unmasticated without injuring the stomach. — In what manner is food digested in the stomach? The stomach is the most important organ — once said to be the seat of the soul. — Diseases are often induced thro' the medium of the stomach; but Dr. Rush believes [illegible]stener expells. — Digestion is effected mechanically, [illegible]chemically — by trituration & solution. —

Dr. Pitcairn's assertion that the stomach possesses a force equal to 12951 pounds, does not deserve to be contradicted. Trituration does not do so much towards digestion – putrefaction does not assist. – The gastric juice & saliva chiefly effect digestion; by the aid of heat & solution. Some animals possess more gastric juice than others. It is very powerful in man – & still more active in Children & old people than in middle aged. The gastric juice acts more easily when the food is well cooked & masticated. – The gastric juice has been said by Jno. Hunter to erode & dissolve the Stomach after death – Dr Rush is doubtful of this – he is disposed to ascribe the erosion & dissolution to other causes –. There is a disposition in certain parts of the body to dissolution from inflammation, &c. To inflammation & mortification he thinks that causes of erosion are to be attributed – Spalanzani found ~~inflammation~~ digestion to go on after death while heat remained – the peristaltic motion of the bowels is continued after death, as we see by the discharge of excrement – the gastric juice coagulates milk, as is proved by the use of rennet, or calves stomachs – Fermentation is rejected by the Moderns from the list of the agents in

Dr Young in his inaugural Thesis in 1802 has changed the Dr opinion of digestion & proved that fermentation has nothing to do in it - it is effected by heat & Solution - by the Gastric juice & Saliva dissolves the aliment. The acid which is found in the Stomach is not the effect of fermentation, but the Phosphoric acid which always exists in the Gastric juice -

digestion - but Dr. R. says he will defend it.
There is a fashion in opinions as well as in dress.
4 circumstances are necessary to fermentation;
viz. heat, moisture, air, & rest - these all attend
when digestion is well performed - there is a
deficiency of gastric juice in dyspepsia - as
when smoking or chewing of tobacco is car-
=ried too far - the contents of the stomach
are acid 3 hours after deglutition, which
proves fermentation to be an agent in
digestion - Much motion after eating pre-
=vents fermentation or hastens it too rap-
=idly - the heat of the stomach is favor-
=able to it - the Saliva contains air. -
Phenomena of digestion. 1st a slight fever
comes on after a full meal - therefore [illegible]
we should eat heartily when
we go into the cold - 2d. Sleepiness arises
from indirect debility, induced by a full meal.
3d. The mental faculties are affected - 4th a disposi-
=tion to rest - patients in Chronic diseases should
eat little and often - Apoplexy and death
are often caused by full meals in delicate
habits - The passions influence digestion -
Cheerfulness promotes it. Grief retards it.
So there not an increased influx of Nervous

fluid/ call it what we will/ to the stomach during digestion? Food after passing the Pylorus is call'd Chyme and mixing with the other fluids forms Chyle, and the basis of the faces. The chyle is taken up by the lacteals. faces protruded thro. the anus. — —

December. 14th. Lecture 28th. — We have supported the doctrine of a fermentative process in the Stomach. — The experiments however have not been complete, so as to justify a decisive conclusion. — We now proceed to consider the Blood; which, taken collectively, is a homogeneous mass. but spontaneously seperates into two divisions call'd Crassamentum & Serum. The crassamentum is subdevided into Lymph & red Globules. &c. The blood coagulates, in health, when exposed to the air. — The larger the stream of blood from a vein, the slower the coagulation. It coagulates slower in a deep, narrow vessel than in a shallow one. The blood assumes an appearance, from a variety of causes, which is denominated Sizy. — The blood of Women who have been four months pregnant is generally Sizy.

It is mostly Sizy in the Spring of the year after exercise, &c. — There is a state of the Blood, wherein no seperation takes place — this occurs in the highest grade of morbid action; in consequence of the violence of which, it becomes dissolved — Blood drawn from the Arteries is dissolved? A young gentleman who graduated last year exposed himself to a heat of 140 degrees Fahr. by which means his blood was dissolved — hence it is not owing to a ferment in the blood, as Dr. Cullen supposed — It is owing to violent action — It is excess of Fetum which occasions dropsy — The red globules are not quite globular — They are not oily, but inflamible; their colour is owing to the Oxygene they contain — Good health is connected with a proper proportion of oxygene and red globules — It gives tone to the blood and fibres — It is sometimes the cause of disease — the Blood contains a portion of air — It is an essential mean of sensation — How various and wonderful its uses in the animal economy! —

Lymphatics — The lacteals are included

in this system - They are furnished with valves -
The Lymphatics originate from the whole sur-
face of the body, pass thro, conglobate
Glands, and terminate in the Thoracic
Duct - They have coats analagous to blood
vessels, but stronger - They are capable of
retrograde motion - vide Darwin - How is the
chyle converted into bone, tendon &c? It
is done by secretion - How is it taken up
by the Lacteals? Dr Rush supposes it to be
by muscular action of the Lymphatics -
action of the Arteries &c? vc Lymphatics
are to be found in every part of the body
except the head - but many circumstances
justify the appinion of their existence in
the head - for instance Hydrocephalus &c.
Veins do not absorb Lymph - They absorb
solid matter &c. - The Lymphatic and Sanguif-
erous System are al continual strife
with each other &c. poisons upon the skin do
no injury -. Mercurials, &c. do not act until
they inflame & denudate the skin - attend
to this fact Gentlemen - More experiments
are necessary upon this subject - This however
is a fact Variolus matter cannot be communi-

=nicated by the skin unless denudated. If it should be found that absorption does not take place on the skin, it will prove that the plague is taken by contact &c. The lymphatics are excited into action by distention &c. They perform important services in the animal economy — They may be compared to scavenger — Travellers through the desert of Nubia carry wet sponges to their mouths — The Enukoleromeneſs of Stove room may be remedied by setting a vessel of water on the stove — It renders the rendu[illegible]ency of sensible heat, latent — When we reflect that the lymphatics, which are now known to be of such extensive use in the animal economy, were discovered no longer ago than 1652, we ought to be modest in our attainments, and look forward for more discoveries, even of greater consequence than the lymphatics! —

December 15 Lecture 29th. Secretion

Dr. Rush began this lecture by acknowledging that he knew no more about secretion at present, than he did when he began the study of medecine — Glands are

a very important part of the body. They are proved to be vascular by the injection. Recipe. The secretions are limpid, viscid, ceruminous &c. The different secretions are supposed by some to be effected by the different formation of the glands. Others suppose the varieties. Others suppose the varieties are produced by fermentation. Dr Rush inclines to this opinion. He means by fermentation, a new combination of the simple parts of the fluid. The secretion & formation of various matter favors this idea. Glands are like closets in a new furnished house, which supply the various wants of the household. Different secretions, lymph, Saliva, gastric juice, pancreatic juice, mucus, Synovia, urine. A direct passage from the prima via to the bladder, or else a retrograde motion of the Lymphatics. Semen, it becomes thick by standing, or remaining long undischarged. thin and bloody by onanism. Mucus of prostate gland. Milk, Dr. Rush inclines to believe that milk is secreted immediately from the chyle, after it is

poured into the blood vessels; because so great a quantity is secreted in so short a time. The secretion of milk is much influenced by the passions. — Excretions Faces. Alexander the Great, observed that his passion for women was the only thing which prevented him from believing himself a God — but, says Dr Rush, he might have found a much more humeliating criterion of humanity in the necessity which the human species are daily under, of making this disgusting and loathsome excretion! Bile has been considered an excretion, but it acts partly as a secretion. The Liver is a manufactory of Sal ammoniac. The natural color of Bile is yellow — acids make it green — Malignant fevers render it black — It overflows during violent passions. — Mad people have a great flow of it. Hydrogen Gas affects the liver specifically — so do Marsh miasmata — fat is an excretion —. The overflow of Bile in Mania is not the cause, but the effect of that disease.

December. 16th Lecture 30th — Excretions continued — perspiration — we know there is such an excretion, by washing the arm, &

exposing it in a glass – The perspirable matter then becomes visible. – It is merely a discharge from the extremeties of the small arteries – It is composed of water, salts, carbonic acid gas, & azote – renders lime water turbid – extinguishes a candle when put under the bed cloaths – When long confined in cloaths, &c it generates Typhus fever – Is the odor it emits of a specific quality, or does it depend upon circumstances? A Carpenter emits much more than a watch maker, cæteris paribus, as it respects health and constitution – This excretion is different in different countries – Dogs discover their Masters by it. Dr. R. told us of a man who could tell by the smell of a Ladys perspiration, whether or not she had lost her virginity! A Lady had a cancer which discharged a mild matter when she lived on Vegetable diet – but a single meal of animal food would render it extremely fœtid – Spirits of turpentine have been smelled in the perspiration 5 weeks after taking them – &c. – Miasmata are said to float in the [redacted] System 20 days – Dr R. believes they may much longer – Is there any difference betwen sweat & insensible perspiration? Dr. R. answers no – There is a constant harmonizing between the perspiration

and urine in health —. A decrease of perspira=tion is followed by an increase of urine.— The perspiration is sometimes sweet, as in diabetes — sometimes acid — sometimes sa=line — sometimes fatid, as in malignant fever — patients seldom recover after these fatid sweats — Sweats are sometimes vis=cid — sometimes yellow — sometimes bloody from extreme agony — There is a plant growing at Natches so stimulating as to produce this sweat — The quantity of per=spiration is different at different seasons, and under different circumstances — The dis=charge by perspiration is greater than that by blood & urine both — In England, 33oz. is perspired in a day — In Italy $\frac{5}{6}$ of all the food taken is perspired — Thus heat in=fluences it — passions, gratifications, &c affect perspiration — We perspire double the quantity in sleeping, to what we do in the waking state — hence the advantage of lying in bed in the beginning of colds, & fevers, &c — Nutrition. — Dr. R. was once of opinion with Cullen that the nerves were the agents, or sources of Nutrition — but he has long since changed it — He now believes with Monro that Nutrition is performed

by the Arteries — It was formerly supposed that the nerves were the part of the body first evolved — but the Arteries ~~were~~ are formed first of all — or at least, are first in action — Order of life, or action — first, the blood acts upon the heart & arteries — The heart and Arteries act upon the Brain & Nerves — and these react upon the body, heart, Arteries, and blood, or muscular parts — Bailli considers the origine of the nerves to be on the surface of the Body — and their termination in the Brain — The Idea is a good one — Dr R. is disposed to adopt it — If nourishment were conveyed thro, the medium of the brain and Nerves, these facts would bear proportion to the size of the Animal — but this is not the case. — a limb will be nourished when the Nerves are destroyed — but not when the Arteries are — The conveyence of the coloring matter of madder to the Bones is also against this doctrine of the nerves

Peculiarities of Females — They are in general less than Males — acquire their growth sooner — Their simple solids more delicate — Arteries possess more contractility — Nerves more sensible — the brain more mobile — Bones different — pelvis wider — organs of generation different — The periodical discharge from the uterus is peculiar to females — their breasts secrete milk — They move the Thorax in

respiration whereas males move the abdominal muscles more—. This is so conspicuous that a physician of observation can distinguish the sex by it in children of one or two years old when in their cradles. The voice of females is more soft and shrill than Males.— The female Mind is not originally like that of males— but is as different as their bodies—. Females are the avenues to reputation in medicine, and therefore their mental qualities and powers ought to be well understood by physicians. Females have a less vigorous and comprehensive understanding than Males. They excel males in imagination. They excel in the recollection of events & words but not of Ideas— hence the Indians commit their traditions to their squaws— Women are superior to men in point of taste as is shewn by their dress &c. Young men who keep the company of Ladies improve much in behaviour, taste, &c. The moral faculty is more acute in females; and more active, but less general— hence they are more devout &c. Females have more charity & humanity than males, but less benevolence— They have less conscience than Males! Their perceptions are quicker, but their judgment and

reasoning powers are weaker, less acute & comprehen=sive.— They have less courage, but more for=titude— They are more communicative than Males. Women tell other peoples secrets, but men tell their own—. Women are less dis=posed to forgive injuries than men— Let not the young champion for female excellence, says Dr R.— Think that I detract from Divine Goodness in making this observa=tions— Do not suppose I am past that pe=riod of life wherein I can take pleasure in female society— This is not the fact.— This difference in the sexes is essential to Love & harmony— Females are less given to venereal appetite than males are more modest— they are different even in the womb.— Catamenia— This occurs in the middle states of america, about the age of 14 years, & ceases at 45 or 50— It occurs sooner in high life than among the labor=ing class— and continues later— Three Girls in Philidelphia began to menstruate at 7 years of age. At the time of the eruption of the Menses in Girls— Their breasts swell— They acquire sexual Ideas, & become in every way more agreable— Women who drink hard, menstruate till near 60— This discharge has returned at 70— Some women never menstru=ate all the time they give suck—. the quan=

tity of blood discharged at one period, is from 3 to 8 ounces — the discharge continues from 3 to 5 days — when the menses appear during lactation, they point out the time to proceed with the duty of child bearing —. Cause of Menstruation most writers agree in ascribing it to plethora, either general or local — Dr. R. is disposed to ascribe it to both general & partial plethora, ~~it is general & local~~ It is first general and then local — The inefficacy of bleeding in preventing this discharge argues nothing —. perhaps its regular appearance is owing to the influence of association, of ideas & motions — Menstruation may be call'd an Hæmoptisis of the uterus — Women are most susceptable of impregnation about this period. Brutes are disposed to venery once every year, by a discharge from the uterus — Women have a discharge monthly, and therefore, are always ready — Monkeys menstruate, — hence it appears that like the human species, they may become pregnant at any season of the year. — The spring of the year is the common period with most animals. — but there are several exceptions —.

December 17th Lecture 31st — The parts of generation have considerable influence upon the body at about the age of 14 years in males —.

The voice changes — bones of the nose enlarge body becomes more robust — &c. This change has been supposed to be owing to the absorption of semen — but this is entirely hypothetical — It is owing, more likely, to the stimulus of the semen on the terminal vessels; — whose connection with the system generally is very extensive —. The shrill voice, & want of beard in Eunuchs, is owing to the abstraction of this stimulus. — Even the stomach and bowels are influenced by this delightful stimulus. — ~~Even the stomach and bowels are influenced~~

In females, at the age of puberty, there is a distention of the Uterus which occasions other changes —. 16 years in females, & 21 in males is the earliest time we ought to marry — There is no state in which mankind do not enjoy the venereal appetite —. They possess it all seasons —. Monogamy is best to health, as well as to Morals — In this case happiness and excitement meet together, and there is no danger of excess. — The Law of Moses, allowing Polygamy, was a just punishment — A man thus, by that law, was obliged to marry as many as he defiled —. Dr. R. maintains every virgin he defiled —. Dr. R. thinks ~~the present~~ such a law would have a good effect at the present day. — Amphibious animals derive the most pleasure from coition — Frogs enjoy the greatest venereal pleasure ~~appetite~~ — . . —

A

vide Spalanzani.- The male toad frog will suffer amputation of his limbs, and even decapi- -tation according to Spalanzani! before he will re- -sign his amarous armfull!!— Conception — of this subject we may say that "Shadows, clouds, & darkness, rest upon it" It is now believed that the animalcula of the male and are not the rudiments of young fetuses —. The female ovum contains the germ, which is excited into action by the semen masculinum. How is the male and brought in contact with the ovum? pregnacy has been procured by a penis but one fourth its natural length — Concep- -tion has taken place when the semen was only inserted at the mouth of the vagina. — Harvey supposed it to be effected by Absorption. Dr R. inclines to this opinion & supposes the semen acts specifically on the ovum, as no disease occurs in consequence of failure of impregnation. The menses are probaly discharged by the Juristal- -tic motion of the uterus and vagina — perhaps the semen may be carried to the ovaria by juristaltic motion. — This is John Hunters notion It is not so plausible as Harveys —. Females con- -ceive readily after a spell of sickness — long absence from home — travelling to a new country &c. — Conception cannot take place unless semen come in contact with the ovum — It is succeeded by pains, nausea &c. these are owing to new action. — The final cause of this nausea, says Dr. Hunter, is to prevent Inflammation —. propensities — A Lady assured Dr. R. that always after conception she felt a disposition to steal every thing she saw

Some have peculiar sensations – as glowing of the leg, &c: others have none of what are call'd preceding symptoms – The semen is a stimulus of a peculiar kind – It seems to be secreted, not only from the fluids, but from the solids – Not only from the body, but from the mind. – Hence the resemblance between children & parents – Having them always before their eyes may have some effect – Hence the general resemblance of people in cities – but there is a resemblance in infancy, before any notice is taken. – Thus Gentlemen, I have ventured to tear the veil of mystery. – our ignorance on this subject is owing to a want of sufficient observation. In future, says the prophetic Dr R. I doubt not but the ~~prophetic Dr R~~ process of Generation will be as well understood as chemical mixture is at present. – Animal Life, the human mind and generation, are, as yet, 3 profound mysteries. Bastards are said to have more genius than those legitimately ~~born~~ begotten. A Curious author supposes it to be owing to the uncommon action of their parents minds, at the moment they are snatching the transient pleasure! – – –

=ced upon Eve - but in some countries this curse is not known - hence Dr. R. infers, that pain is not necessarily connected with parturi=
=tion & childbearing - vide Boydom. - The Turks take sweet oil previous to their labours - It acts by inducing debility, and thereby les=
=sening the pain; - for delicate and feeble women have the easiest labors - . Bloodletting has the same effect - . This was Dr. R.'s opinion 12 years ago; & he is now more convinced of its truth. - The pain of parturition says Dr. R. is as much a disease as pleurisy. (as the effect of disease) and to be removed by the same remedies viz. phlebotomy; &c. The marks which occur on children at birth, have been ascribed to the immagination of the mother during pregnancy - but this is unphilosophical. The sys=
=tem is more disposed to plethora during gestation than at any other time. - We have thus Gentlemen according to our syllabus, taken a view of the functions &c in a healthy state when the excitement is regular - the exciting causes & the excitability are equable. - It is thought by some, that the Antediluvian age may be attained to by the aid of medicine - But "Dust thou art, and to dust thou shalt return" We live here by force and death is our natural state previous to our enjoyment of real life. - Fasting, Medica=
=ting &c. have been used in vain to avert the stroke of death. - However Dr. Rush believes it possible for

man to attain to a much greater age than is usual at present — Instance the disposition of some to renew their ages; — which seems to be an effort to regain the Antediluvian age — Revelation favors this opinion, &c. It is only to be attained by physical, rational & moral causes. — We now take our final leave, gentlemen, of the Physiology, &c. of the human body in a state of health, and proceed to a consideration of the next division of our Syllabus — namely, pathology. —

December 20th Lecture 33d. Pathology.

Diseases are blessings in disguise — They lead us to the study of anatomy, physiology, & Botony. They lead us to enquire into the operations of the mind, &c. Sickness is necessary to impart a proper relish for health. — Hospitals and dispensaries institutes a large portion of human misery, and thereby call forth the exertions of humanity. Diseas are kindly sent to reconcile us to death; — Death would be terrible were there no diseases. By their physical influences — or rather, physical evils, by their influence, on the moral faculty, are the cause of good. — By pains & sufferings we are recommended to death. — How terrible would it be to leave the world in a healthy & happy state. [i.e. himself in a healthy & happy state.] — The system of Pathology hitherto published, are very imperfect. Pathology is that science which treats of the causes,

seats. & symptoms, of diseases.- Causes - are remote predisposing, occasional, or exciting, & proximate. they may be better understood by an illustration - for example, Cold acts as a remote cause of inflammatory fever - the debility which it induces is call'd the predisposing cause - Subsequent exposure to heat constitutes the occasional cause or exciting cause. And the first morbid action is denominated by Dr R. the proximate cause? But those causes do not always occur in this order. Remote, exciting, & even predisposing causes often act together -. the predisposition of disease is often so great as not to require an exciting cause - hence the remote may sometimes act as exciting causes. Miasma is the remote cause of fever.- All diseases except wounds, and some local diseases, depend upon predisposing debility - Debility is devided into two Kinds, viz. Direct & Indirect. - When the accustomed stimuli are abstracted, or a part of them, Direct debility takes place - when more stimulus than usual is applied, indirect debility is brought on. - Suppose the healthy point to be at 50 - an addition of stimulus would induce indirect - if stimulus is abstracted, when the System is at this point [50] of excitement, direct debility is the consequence. These two kinds of debility are so nearly alike in their effects,

that they are only to be distinguished by their exciting causes.— the range of predisposition is about 10 above and below the healthy point.— Debility is the predisposing cause to the evils in the world, ~~whether moral or physical~~; both Moral & physicals.— Dr R. is of opinion that there are no positive evils; but that all evils are misplaced benefits—. Small pox, measels, pestilential fever, &c, are not positive evils they may serve valuable purposes.— A crumb of bread in the Trachea is not a positive evil— it is only a good in error loci— Miasma is far from being a real evil— it is a cordial— supplies the want of food &c. If we could bottle and preserve it, perhaps a better cordial could not be introduced into the materia medica.— It is only in an over proportion, that it is injurious.— How much more fatal is an over dose of opium? Yet who would contend that opium is a positive evil? what is poison to man is agreeable to some other Animals, & vice versa— so that the evil consists entirely in the error loci of the substance— pain, bad smells, &c. are not positive evils;— pain is a different degree of that which constitutes pleasure— bad smells are useful to some animals— bile insects, &c. are not positive evils;— they are only evils in error loci.

The spider which is, so offensive in our houses, is useful in our stables, &c. Moral evil consists in a derangement, or error loci of the virtues. Owing to the loss of the will, the faculties become displaced. it is the main pillar of the mental fabric. When the will is destroyed the mind tumbles down. There are no new faculties introduced into the mind to create evil. It is caused by the derangement of the original faculties. Pride is nothing more than misplaced dignity. Envy is dislocated emulation. every vice is a misplaced virtue; or a virtue out of joint. This opinion did not originate with Dr R. it was first published by a Mrs Edwards. pleasure is increased by contrast. the effects of negative evil, are all positive. Debility is ~~increased by~~ succeeded by increased Excitability. Debility is the inviting cause of that excitement in which disease consists. the Electrical rod does not more certainly invite lightning, than debility whether general or local does disease. The increase of excitability, which succeeds debility, is nearly the same, whether it be direct or indirect provided it be brought on suddenly. Disease consists in irregular excitement. There is but one remote & exciting cause of disease, and that is

Stimulus. Stimulus is a genus— the first effect of stimulus is Tonic, then Atonic, next irritant; which induces morbid action— Equable excitement is health— irregular excitement is disease— the art of healing consists in equalizing it. Debilitated parts in the body, like minus clouds, attract the plus, or excessive excitement of other parts, and produce an equalibrium. pain is not a disease, but a symptom; like thirst in fever, &c... when Dr. R— formerly told his class that there was but one fever, it startled them; he now asserts that there is but one disease in the world! and that consists in irregular excitement—. obstructions schirri, collections of water &c, are not diseases but the effects of disease.— there may be disease without pain, as is sometimes the case in Epilipsy. Hectic fever, &c. when effusions, &c. produce death it is by reaction; thereby producing morbid action.— Dr. R— makes a distinction between a disease & a disorder:— Hepatitis is a disease abstraction is a disorder— thus says Dr. R. I have laid open my theory before you— I have been call'd a Brunonian but I am not;— Brown says there are asthenic diseases; I say there are none— asthenia is only predisposition to disease; it however requires attention. My theory is so simple, that you will loose more than gain at my Lectures. —

December. 21st. Lecture 34th. cold is the remote cause of inflammatory fever – the debility induced is the predisposing cause – the heat of a stove room, or vernal sun, the exciting cause – and a convulsive action of the arterial system, on the disease itself is the proximate cause. – Suppose healthy action to exist at 50 – when stimuli are abstracted direct debility is induced – when added indirect debility is the consequence. – In chronic debility of both kinds the excitability is expended: but when the system is debilitated suddenly, either directly or indirectly, the excitability accumulates. – Yellow fever may be brought on by dejection, fasting &c, here the excitability accumulates, but if the abstraction be made gradually the excitability is diminished, and the miasma has nothing to act upon. Labourers should continue their labor in order to escape Yellow fever; for if they abstract the stimulus of labor, the excitability accumulates, and the miasma takes effect. Excitement may be excessive or preternatural without being morbid. – It is irregular, or morbid action only which constitutes disease. Disease like fire, is a unit however excited. – Disease is always partial – there is no such thing as universal disease. – Fever is confined to the blood vessels, mania to the Brain &c, the bloodvessels possess great irritability, but,

happily for us, but little sensibility. Brown places all diseases in debility. D. A. denies its being a disease. There is but one predisposing cause of disease, which is debility — one exciting cause which is stimulus — and but one proximate cause, which is morbid action. Disease occurs in the following forms; 1st. convulsion as in fevers — 2d. spasm, as in colic, and tetanus — devided into tonic & clonic — 3d. preternatural heat, which is local, as in the skin, head, & Bowels, &c.* 5th — Shocks of pain, as in the Gout — call'd aura arthritica — *4th. Great itching as about the anus. &c.* 6th. suffocated excitement, when sensation and motion are suspended, as in some malignant fevers — this is the most dangerous form of disease — /vide Coxes medical Museum vol. 1st page 62/ It exists without inflammation. It is to be relieved either by gradually abstracting stimulus, & exciting new, and less dangerous disease, or by applying the most powerful stimuli to overcome it/ — Take notice says Dr Rush that I call disease morbid excitement, and not inflammation — Inflammation is only an effect — it occurs only in the second grade of morbid excitement — There are many diseases with as Hydrophobia, cholic, &c. I knew has been death from cholic without inflammation in the bowels; in this case, morbid action was above inflammation. — No one disease is confined to one form

of Morbid excitement: all the forms occur sometimes in one disease, and in all parts of the body in a malignant fever.— but certain parts are more disposed to take on certain forms; as convulsive action is the form which the muscles and blood vessels take on— Spasm in the bowels—. Itching in the integuments.— Heat in the skin— Shocks in the head and breast as in Gout &c. Dr. R.— excludes cold, sweats & hemorrhages from the forms of disease—. pain is not a uniform effect of disease— there is none in the walking state of Yellow fever— pain, therefore, is not in proportion to the danger of the disease—. Instance in the Tooth ache &c. pain is acute in membranes—. lancinating in muscles.— Throbbing in cases of phlegmon— gnawing in bones— twisting in the bowels— lancating in the joints, &c, there may be disease without pain, but not pain without disease.— Observe, Gentlemen says Dr. R.— that the principles apply to all the moral and physical evils in the world— Affection is essential in some cases where fever & fire is not present.— In the blood vessels, morbid action produces inflammation & congestion. In the glands, schirri; in the joints, kidneys, & bladder, calcareous matter; in the skin,

eruptions, &c. varying the effect, or product, in different ~~points~~ parts. — — — —

December 22d. Lecture 35th. Storms are of different forms; but, like diseases, they are all owing to convulsive action as their proximate cause. Disease consists in Morbid action. Disorder is the effect of disease.

Remote and predisposing causes of disease. Children are predisposed to disease by the ill custom of mothers during pregnancy and the bad management of Midwifes during labor. Washing children with spirits as soon as they are born is a bad practice. They are often injured by improper food, by swadling cloaths, &c. Cholic is often brought on by nurses taking acids. children are predisposed to disease by premature study, confinements in school houses, and the Tyranny of tutors. Many cases of hydrocephalus are induced ~~by~~ in children by blows on the head, falls, &c. Influence of the air. Its sensible qualities, are heat, moisture, cold, & dryness. It is also impregnated with Miasma, Marsh Emanations, effluvia from plants, &c. Heat & cold are relative terms; the extremes of either is not known. after 45 years of age, heat

becomes more necessary to the human body— all animals require heat— In all constitutions a certain degree of heat is necessary to equable excitement.— A greater degree induces indirect debility— a less degree, direct debility:— Insolation— a streak of heat on the brain—. Heat at first, increases appetite— and afterwards induces Dysentery & cholera— disposes the skin to darkness— is less unfriendly to ~~it~~ thaw to young people— excites the venereal appetite early, & supports it late— Inflammatory complaints occur after a change from cold to warm—. Dr R— has observed that uniformly ~~that~~ warm summers are the most healthy— Most Indians can bear our climate better than we can, for a while. It takes them some time to cool— our first parents were placed in a warm climate— Heat acts powerfully upon the eyes; hence Cataract is more frequent in warm countries & ophthalmia, &c,— Heat impairs the mental faculties— but perhaps aids the Imagination— Heat disposes to disease in children, especially under two years of age— The rays of the sun have great effect upon the skin in turning it brown— but the heat of fire does not affect it, as in smiths and cooks— i.e. in the same way as the sun—

The proverb, that "a green Christmas makes a fat churchyard" is founded in truth. Diseases are often generated in one season, and appear in another - as a warm summer makes an unhealthy Autumn. No climate is necessarily unhealthy - most of the diseases ascribed to heat are owing to errors of our own, in eating, drinking, dress, &c. where the inhabitants act agreeable to reason, no matter in what climate, health and longevity may be attained. Heat produces different effects according as it is combined with moisture. a portion of moisture is necessary - In hot stove rooms, a vessel of water should be placed on the stove to supply this moisture. Hot dry seasons dispose more to prevalent diseases, than hot moist ones. The evaporation from the Sea, in England produces the Sea fret - The english are rendered fair skinned, by the moisture of their Atmosphere. Cold is a negative quality -. Its universal action is sedative, and debilitating. This is infer'd from the slowness of the pulse in cold countries. Effects of cold in diseases, &c, cold debilitates directly - Cool breezes do not brace the system by that quality - Heat induces indirect debility;

and when it is induced, the cool air acts only by abstracting the superfluous Stimulus, and restoring equable excitement; - which is health. Suppose the heat so great as to carry the excitement 15 degrees into indirect debility - The abstraction of 15 degrees of heat, as of the quantity which induced the debility, would bring the excitement back to its healthy standard. - It is in this way that cold acts as a brace -. Heat would brace in the opposite state. - - - - - -

December 28th Lecture 36th. Cold produces debility and excitability in the Arterial System - produces langour in the organs of voluntary motion -. The stimulus of aliment counteracts cold - much better than ardent spirits -. Cold weakens the Venereal appetite - debilitates the mental faculties - reduces both plants and animals - Causes old sores to bleed afresh - renders sweating difficult - Cold invigorates the appetite; particularly for Animal food. It is not a stimulus; it only allows other stimuli to act - It promotes urine - is said to cause scurvy - but other causes must cooperate -. Cold in a certain degree produces paleness - beyond that redness - and beyond that gangrene -. It retards

growth - Checks perspiration - The stoppage of perspiration is caused by the debility, and consequent contraction of the extreme vessels, induced by cold - Much has been attributed to obstructed perspiration; but the solids are also affected by cold, and debility induced - people are most healthy in cold countries - but are subject to putrid fevers when spring comes - owing to the permanent sedative effects produced by the long cold weather, which prostrates the strength of the solids, disabling them from reaction - their fevers run rapidly on to gangrene - Cold succeeding heat of short duration, produces fevers, cholera, &c. - of long duration; scarcely any effect - . Heat succeeding cold of short duration produces inflammatory fevers. - of long duration produces fevers of a Syphus or gangrenous nature - The most acute inflammatory diseases, are found in the Middle Latitudes - Effeminancy has nearly banished sizy blood from Britain - It exists in Pensylvania at present, like it did in Britain in the time of Sydenham Sudden changes of temperature do not

necessarily produce disease - they may be render-
-ed inoffensive by accommodating the dress
properly - [redacted], those changes are salutary in
Great Britain - Dr. Rush never knew but
one person who suffered from dressing too
warm - in this case it brought on a spit
-ting of blood -. Sydenham says nearly
all his patients were sick from the want
of a suitable dress. The Chinese dress accord-
-ing to the weather - have several garments
which they put on and off as occasion re-
-quires. Cold acts more powerfully in sleep than
waking - when the Stomach is empty than
full - It acts powerfully on old people; -
They suffer most with cold - drunkards also -
children bear cold well. One Indian [redacted]
woman was found dead from cold with
a living child at her back. - Some people
are very sensible of the qualities of the
atmosphere -. An old man in Philadel-
-phia could predict the changes of the
weather by a sickness in his stomach. -
Ducks straighten themselves up and
clap their wings before change of wea-
-ther. the cold hand of a physician often
induces rigors over a patient -. A Lady took
cold from leaving off a ribbon from cap
which she had been accustomed to wear.
In chronic diseases we should advise to
keep the feet warm - in all nearly. For by
the feet and mouth, says Dr. R. I believe

we receive nine tenths of our diseases... from a record kept by a Frenchman it appeared that the most people died in January from which time there was a gradual decrease until the month of august - but it is not common for the most deaths to occur in January - ats people, in these states are most healthy in June and July. - physicians may generally leave home with least disadvantage ^ just the month of June. - ^ June is a Solstace, where diseases make a pause - but it is only to change one set of destroying weapons for another. - Colds are most frequently caught in the night - yellow fever in Philadelphia most frequently attacked in the night. Heavy and long rains will chase away yellow fever without frost, if no warm weather succeed. - Marsh miasma. Heat and moisture combined are essential to the production of these; for either alone is insufficient. - These miasma are a copious source of disease. - The importers of yellow fever ask why we have not yellow fever every year? why have we not the same quantity of grain & fruits every year? these are influenced by the seasons; and why not fevers? - the pellicle on ponds prevents ~~exhalation~~ exhalation, and consequently disease - but a rain which breaks the pellicle, will suffer exhalation and disease to follow. pavements render the earth impervious to fluids - and thereby do injury. [redacted]

Streets ought not to be paved so closely. Exhalations from cabbage, and a variety of vegetable and animal substances, induce fevers. They act 1st. upon the Stomach, inducing black vomit, and inflammation of the Stomach — 2d. upon the liver. — 3d. the strength is prostated? 4th. They act upon the blood vessels. — 5th. upon some of the viscera; as the brain, kidneys &c. — 6th. upon the Nerves and muscles. — 7th upon the glands — 8th upon the skin; inducing eruptions and 9th. upon the eyes; inducing opthalmia, &c. How long miasmata may lay in the body without inducing disease, is uncertain; but it may much longer than 30 Days — Some have supposed that miasmata do not exist, because they cannot be detected in the atmosphere by chemical tests — but this is no proof for those tests do not detect the matter of contagion of small pox — which we know does and must exist in the air.

December 24th Lecture 37th. It has been said that Yellow fever was the ship fever of Tropical climates — but no such thing can exist in the tropical climates; — assertion is a solecism in Medical language. Miasmata to adhere to cloaths, and even to the walls of wooden, brick and stone houses — Miasmata do not adhere to white washed walls — nor to ground floors — . pregnant women, and

patients with local inflammation escape infection by miasma - owing to the stimulus of distention in the former case, & pain in the latter -. Canine madness is produced in Rabid animals by the retention of morbid excretions. - Typhus mitior, Jail, hospital, lownerous, and ship fevers, are all Synonimous - In these fevers the pulse is neither full nor tense - bleeding is seldom necessary. - Sometimes delirium comes on - the senses are diseased - Lymphatic glands swell as in the groin, &c. these have been mistaken for venereal swellings - they are removable by the bark & without Mercury -. Dr. Mitchell supposes animal and vegetable miasmata to be the same - but Dr. R. cannot assent to this - Fevers from animal miasmata appear chiefly in cold weather - in persons of weak constitution the pulse is seldom above Typhoid - bile seldom appears - The fevers are not communicable above a few yards distance. - Fevers from vegetable miasmata are just the reverse of all these. Yellow fever was never known beyond the sphere of marsh and other effluvia - Nor jail fever beyond that of

human effluvium.— Dr R.— has said that cold and heat are not necessarily unfavorable to health— the same, continues he, may be said of miasmata— they might be expell.d from the list of human evils! Holland has been rendered healthy by cleanliness. The United States will perhaps continue many years subject to malignant fevers, in consequence of the neglect of cleanliness— of the defect of proper cultivation of the soil.— and of the belief in the importation of diseases! phlogisticated air proves the exciting cause of disease frequently— as of Epilepsy, dizzy head ache, &c. Burning coal in chambers has often occasioned death—. Vegetables give out a deliterious gas in the night—. Some winds, as that call.d by Bruce, Simoom, are charged with lethiferous impregnations—. The Simoom is charged with nitriolic acid; or sulphurous gas.— near the Scioto is a piece of ground which proves fatal to Deer & Dogs—. vapours are emitted from the earth during some earthquakes— and from some springs, which contaminate the air—. Dr R. once supposed the air to be hyperoxygenated during epidemic

diseases; but chemists have proved that the proportion of oxygene in the Atmosphere is the same in all countries, climates, and seasons—. When the ~~wind~~ air is changed favorably for the existence of disease, we should divest it of all cooperating causes—&c—

December 27th Lecture 38th. Influence of particular situations—. A country is more or less healthy, according as it is more or less cleared or cultivated—. New countries are always healthy—but when cleared without being cultivated, they become unhealthy—and when cultivated, healthy again—. Dr R. never knew an Epidemic dysentary in this City—but many Sporadic cases.—He often knew it epidemic round the city—. Cities are the jails of men. They are all unhealthy.—Animal, and vegetable diets predispose to Dysentary.—Dysentary is often said to be caused by fruits It is not the fruit—. The fruit only prepares the way for the action of the Autumnal exhalations.—Sandy & poor countries are always healthiest.—High situations are most healthy—they are coolest—. The neighbourhood of large towns are liable to Bilious & Intermittent fevers.—Miasmata Dr R. knows may be carried 10 miles—some say 40 miles.—Mill ponds generally introduce intermittent fevers into a neighbourhood. Those ponds should be environed with Trees; and

they will render the ponds harmeless. Dr R. knew a family preserved in such a case, by a small copse of woods —. While the air at a certain distance from the sea shore, either on land or Sea, is healthy; that at the shore is unfriendly to some diseases; as Asthma, Rheumatism, Consumption &c, but is friendly to diseases of great debility —. The difference of shore air is supposed to be owing to the mixture of sea and land air —. Fatal effluvia are often generated in cellars — sometimes in Privies, duck ponds, & other local repositories of filth. — change of situation often occasions disease; as going from one country to another. — sometimes the change does not affect them the first year, but attacks them on the second —. Moving from country to City will induce disease. This disease on changing situation is call'd seasoning to the new climate —. Old people who remove from low and marshy, to high situations, often die. for the Stimulus of the miasmata became necessary to the support of animal life in them. — In like manner plants are affected. — It has been said, in defence of the healthfulness of marshy countries, that there were more old men to be found in them. but this against it, for there ought to be a certain ratio of middle aged people. — Influence of heavenly bodies on health —. the nicest observers have acknowledged their influence — The sun affects the body — sometimes the eyes head, &c. —

The Moon is next in influence. But the influence of planetary bodies is not confined to man. Even Oysters, the lowest link in the chain of animated nature, are affected by them. they are fatter at the full moon than at any other season. Who then can doubt its influence on man? Dr. Balfour has paid considerable attention to sol-lunar influence. The full moon hastens parturition; hence it was formerly invoked in time of labor. The Gout has been much influenced by the full and change of the moon. The nervous system is most influenced by it. A Lady of Philadelphia informed Dr. R. that her husband was always most cross at the full of the Moon! Mania has acquired the name of lunacy from the influence of this planet. Epilepsy is undoubtedly governed by it. The body feels the diurnal & Annual revolution of our earth, as is seen by the fluctuations of fevers, &c. Dr. Darwin very happily calls the evening, the Autumn of the day. The pulse is always quicker in the evening - especially in disease - therefore we should advise, in chronic diseases particularly, to go to bed early - avoid all crowded assemblies, evening parties, &c. as theatres, Balls. & the like - . - -

December 28th Lecture 39th. — Contagion.

Specific Contagion, consists of certain particles of secreted matter which propagate diseases like that in which those particles were secerned and independant of the Atmosphere. Infection is when diseases are derived from the air. Some contagious diseases, as Cynanche Maligna, are propagated by specific contagion; and are also occasioned by a certain disposition of Atmosphere. Some contagions, as Itch, Syphilus, ringworms &c. are fixed and only communicable by contact. — Others, as scarlatina, &c. are Volatile, and communicate thro, the medium of the atmosphere. Contagion is received by the Lungs and Stomach — but it is doubtful whether contagion can affect the body when applied to the skin — as the matter of small pox does not communicate when applied to the skin. — The Itch, and some others, are no objection to this; as they are exclusively diseases of the skin. — The History of Epidemics is very interesting to us; as our cities are much affected with them. —

Small pox and Measles are much influenced by the sensible qualities of the Atmosphere — Scarlatina anginosa is still more influenced by them. — There is a kind of Monarchy among diseases —

for while one reigns epidemic the others are compel? to do homage to it by wearing some part of its Livery. — Dr R. thinks small pox & Measles cannot affect the body at the same time; but that they succeed each other — &c. pay attention to this law of epidemics, Gentlemen, — that they compel all other diseases to wear their Livery; and that they sometimes banish them from their dominions. This fact was first mentioned by Sydenham. Epidemics of feible nature will sometimes banish diseases of much greater violence. Some people never take contagious diseases. Epidemics often affect persons of one country only — of one color only — of one age only — of one sex only — of a certain rank only — they affect certain communities only — one family only — persons of one profession only — they often affect none but the human species — sometimes both human species & quadrupeds — sometimes only quadrupeds — sometimes they affect fishes — Insects, &c — Musquitoes never fail to accompany the Bilious epidemic fever of this country. / House flies always retreat at such times —. New insects sometimes make their appearance; as the Hessian fly; & potatoe fly, &c — The fly which destroys our wheat was not imported by the Hessians — it is of domestic origin! — Those flies have not been discovered in Europe — They have been known here these 50

years— but were not very numerous.— Even trees are affected during epidemics— Meteors, Earthquakes, and Volcanoes attend or precede Epidemics. Great Epidemics have other premonitory signs; as the flight of birds— death of cats, dogs, &c. Epidemics assume different forms; as Plague, scarlatina, Leprosy, &c, &c,— We do not know what it is that affects the constitution of the atmosphere so as to produce epidemics.— It may be Electrical matter Epidemics run partially— so do hail & rain storms; the pulse is quicker during the prevalence of epidemics—. Some diseases of weak action were removed during the prevalence of the Yellow fever; and healthy people had continual headache, languor &c. It quickened the pulse universally; therefore must have been derived from the atmosphere.— Dr. Rush has given Bark by the pound without unshackling the Lancet in Autumnal fevers, & vice versa. The time will come, when we shall lay by the Lancet and use tonic medicines— You must not then, says Dr. R.— censure my encomiums on the Lancet; for diseases change; Epidemics were once supposed to be sent from heaven— then from some of the planets— then from the Eastern world, particularly from Egypt and Siam— Even

at the present day, many suppose them to be derived from foreign places!! and carried in ships and Balls!!! It is a lamentable proof of the low state of Medical science at the commencement of the 19th Century.— Diseases from Aliment— Except in aliment leads to the pernicious practice of drinking ardent spirits, and using Tobacco— It disposes to apoplexy & palsy— causes dyspepsia, &c. 8 lbs. of aliment is said to be the quantity for a laboring man in a day— we can eat much more vegetable than animal food in a day— Food seems not only to nourish the body, but also to support animal life by its Electricity.— Water is not altogether inert in the body— Disease supplies the place of aliment in supporting animal life— Instance a Virginian who lived 60 days without food— he was kept alive by the uncommon increased action of his Brain. They who accustom themselves to a certain quantity of aliment, cannot bear a peep— Therefore it is best not to be too particular about it— Children often lay the foundation of disease at boarding schools, by being starved in point of aliment.— Famine accumulates excitability— causes fever, fetid breath, &c. afterwards hemorrhages, mania, &c. Hunger increases the strength of

some animals; as the Lion—. A small degree of hunger increases strength— how? By the stimulus of the desire of eating, and of life, acting upon the accumulated excitability— It is upon this principle that people are more devout during a fast— Fasting affects all the mental faculties. — — —

December 29th. Lecture 40th. Diet produces disease from its quality— animal food: flesh, many nations live on fish, owing to a scarcity of other food— others from indolence; as the Africans— some from absurd religious opinions— Fish contains but little nourishment— Lessens the general appetite— &c,— If the practice of keeping Lent was universal it would be a good one, as it occurs at a season of the year when less stimulus is necessary to health. At other seasons this kind of diet renders the countenance pale and disposes to malignant fevers, Leprosy, &c, The flesh of carnivorous animals disposes to most of the above diseases; also do animals in consequence of loosing their vegetable nature! Much depends upon the food of animals we eat— Experiments have proved that [redacted] Mutton & Beef putrefy sooner than Lamb & Veal.— Pork is apt to produce disease— instance the Jews—. Perhaps one reason of their being commanded to abstain from it was on this account—. Formerly much more animal food was eaten than at pre-

sent; hence plague, leprosy, Elephantiasis, &c were the diseases of those days — Vegetable diet Vegetables differ much in their degrees of nourishment — some approach near to Animal food — Their nourishment is in proportion to the ~~fat~~ sugar they contain — Acids corrode the teeth, & vegetables dispose to palsy, dropsy, Anasarca, dysentery, dyspepsia, flatulency, &c, lessen the Animal appetite. They subdue the ferocity of the passions — clear and invigorate the understanding — &c. — Milk, which is ~~a substance~~ an Element between Animal & vegetable nature, in some people produces sickness & acidity in the stomach — Butter sometimes causes eruptions on the skin, &c — preparation of food — Animal food eaten soon after it is kill'd is harder to digest — when kept too long it produces dysentary. Old or spoiled fish, cause eruptions, & disorders of the Bowels. Oysters, though the most easy of all fish to digest when too old, or too much roasted, will produce colic; and even ~~in~~ induce a tendency to Asphyxia when too hard & dry — Dr. R. was twice call'd up at night to a gentleman with the colic from eating Oysters — They should be eaten at NOON — Eggs boiled hard produce colic & indigestion, &c. Vegetables are unwholesome when old. Bread half

-baked, or prepared will cause colic and asphyxia-! A Gentleman in Philadelphia, lay 3 days in this state in consequence of eating heartily of half-baked hot-bread- He was a convalescent at the time of eating it.- Toasted cheese will produce it- as will eating without mastication,- call? bolting. Eating in a hurry at long intervals, &c,- some suppose vegetables to be the only proper and natural diet for man; and that man will cease to labor- if this were the case vegetables might support him but not otherwise- Man is the most omnivorous of all animals- Large quantities of food after fasting is very injurious- it sometimes induces sudden death- instance, Otway the poet, who died just after eating half a loaf bread, which he had procured with money given him out of charity-. In all chronic diseases 4 or 5 meals a day should be ordered.- The debilitating effects of vegetable diet constitute its good properties in small pox, and some other diseases-. Changes after long confinement to one kind of diet sometimes have bad effects-. Fainting has been induced by the sight of animal food after a long abstinence from it- instance, Bruce in the desart of Nubia.-

Disease is caused by the improper mixture of ali-
=ment – This is a faithful source of disease.
Order a single dish always for chronic pa-
=tients. Food injures by being too hot or
too cold –. No animal but man takes its
food warm –. Milk soons hardens in the
stomach. The stomach retains a vindictive
remembrance of food, with which it has
been satiated, for a long time –. Dr R.
remembers when to have eaten half a boiled
chesnut, would have produced vomiting
and perhaps death! He retained this disgust
for many years; having been satiated with
that fruit – Diseases are sometimes produ
=ced from food lying long undigested
in the stomach – Hence it is necessary
to go back in our enquiries beyond the
time of attack –. Pork has lain 2 months
undigested! a certain author says five
months!! Food becomes injurious by being
kept in certain vessels. – Lead and copper
are the most pernicious –. Iron and silver
are the best –! Dr. Bond's wife both died
of dyspepsia in consequence of using a
copper vessel –. Food becomes injurious
by being kept in unclean vessels –. Animal
food is sometimes injurious from the ali-
=ment which the animal fed on before it
was "killed" – as the pheasants a few winters since
in Philadelphia –. A Dysentery was produced

at princeton college when Dr. R. was a student there by eating pot-pye made of pigeons which had fed on pokeberries. A Dysentery was caused just the army by living on fresh meat — And cured by the use of salt meat. — A little of it is more healthy than just meat — fresh meat is best in winter; salt meat in summer. Salt meat produces scurvy at sea for want of vegetables. —

Idiosyncracies — Many people cannot eat fish — at least to eat it would produce disease —. Condiments — Salt, vinegar, Mustard, sugar & spices — Salt is almost universally used —. there are however whole tribes of Indians who are strangers to it — It produces in them vomiting & purging — Vinegar used in moderation is a good condiment — when taken in excess it disposes to Gout, dyspepsia, &c. Mustard disposes to spasm & inflammatory complaints — Sugar in excess disposes to dyspepsia — Spices also, dispose to dyspepsia when used in excess — They are said to produce a swelling of the testicles in Africans — Tea & coffee are injurious when taken too strong — Tea produces wakefulness — but if taken when below the sleeping point, it will induce sleep — it disposes to gout owing to

this, Women are more subject to Gout than men; instance dyspepsia, Hysteria, &c. —— Coffee used to excess produces many nervous diseases - it is exhilarating - upon the whole, Tea & coffee are far less injurious than ardent spirits - instance the change in Europe since their introduction - They appear to be stepping stones to ascend from the loath- -some vice of drunkenness — —

December 30th. Lecture 41st. Influence of diet and drinks in producing disease, continued. Drinks. however long some animals may subsist without drink, man stands in as much need of it, as he does of aliment - It is said that nine tenths of mankind drink water for their common potation - it is the beverage of nature - Haller ascribes too much to water when he says it preserved his sight good to an old age - Water produces disease by its sen- -sible qualities - first by its coldness, which affects teeth, stomach &c, there are more teeth drawn in summer than winter in Philadelphia -. Cold water, acts in inducing death &c. by inducing syncope &c - it acts by suddenly abstracting stimulus the bad effects may be prevented by abstracting the heat of the body gradually, previously to

drinking, by washing the hands and face in cold water - grasping the cup in both hands, &c, cold water does not allay thirst as well as that which has been warmed a little /aired, so call?/ - the consequence of drinking cold water in the morning, is illness all day - for - for the sedative effects of the water prepares the way for reaction and fever -. The facility with which water lathers with soap is the criterion of its purity. It is a bad practice to drink cold water in the morning, or between meals or at any time in large quelphs - No person in health requires these practices - they injure digestion - Wine - is composed of saccharine matter call? mucus, acid, ardent spirits, & water hence it contains a considerable quantity of nourishment - The acute effects of wine is intoxication - The chronic effects are gout, fatness, &c. - Dr. R. ascribes gout in the limbs wholy to this cause; as he never saw one case occur in any but wine drinkers -. Gout is the effect solely of ardent spirits & fermented liquors liquors - Eating will not produce it. The older wine is, the less disposed to cause gout - but so when taken with food -. Wine should be seven years old; it then looses its acid -. Beer is difficult to get drunken - It causes gout, palsy, apoplexy &c. Dr. R. knew several Beer drinkers who died of apoplexy. —

Cider does well enough with laborers – but it is bad for sedentary people – causes palsey, gout, rheumatism, &c. Dr. Franklin's first fit of the gout was produced by cider – a hot iron plunged into cider prevents its bad effects –. Ardent Spirits – Had I an hundred tongues, says Dr. R. and each of them endowed with the eloquence of Demosthenes I should still be too feeble to describe the evil effects of this legion of devilish spirits on man! No man who is habitually stupid with spirituous liquors ought to be admitted in a court of justice – They destroy veracity & all the moral faculties. Cold, heat, hunger, hard labor, fatigue, debt, guilt, &c, &c, lead people to drink ardent spirits – but eating, drinking Molasses & water, coffee, coffee, tea, &c. is much better –. It is the province of ~~every~~ physicians, peculiarly, to dissuade from the use of ardent spirits. – Diseases from dress – who would have thought that the covering given to hide the shame of man, in consequence of the loss of his innocence, should ever have become the remote cause of disease! Dress acts 3 ways in causing disease – 1st. By quantity 2d. By form or fashion, & 3d. By quality. – pride is said never to be too hott nor too cold – 3/4 of the fevers in this city are brought on by wearing

summer cloaths too late in the autumn; putting them on too early in the spring; & by clapping with too few bed cloaths. — With respect to the quantity of clothing, some allowance must be made for habit. Fashion causes many diseases - Vertigo has been occasioned by tight shoes; & fainting by tight stays - tight shirt collars often cause diseases of the braine &c. When shall we cease to be the slaves of European fashions? The present state of things seems to justify the sentiment of Swift, that man is an animal capable of reasoning, but not a reasoning animal! Instead poulticed neckcloaths in summer, & naked elbows in winter, &c, &c — Raw silk transmits heat slower than wool. Whole regiments have been saved by wearing flannel shirts; while those with linnen ones were dying rapidly - as in Canada during the late war. Cotton and flannels are the best for common use - they retain heat, even when wet, and do not produce vermin like linnen. - Dr. R. thinks it would be best to wear flannel in all seasons - he denies that it effeminates. - Fashion has caused diseases; and diseases in their turn have introduced fashions. - Hair powder was first used to hide the disease call'd plica polonica - poulticed neckcloths to conceal Scrophula, or Kings evil. —

Boots to hide crooked legs from the public eye. &c. — Poisons — poison is a relative term. There is no poison which has not been taken in certain quantities by certain animals without injury — poisons are devided into Animal, Vegetable, Mineral, & Aerial. Animal poisons are such as that of serpents, rabid animals, &c — Vegetable poisons, are such as hemlock, stramonium, &c. Mineral poisons, such as Arsenic, lead, &c. Aerial poisons, such as carbonic acid gas, Azote, and so on. How do they act? different poisons act in different ways. We are told that they act by destroying the vital principle; but are not told what that principle is. Some poisons act specifically exclusively on the mind; which mostly prove fatal —. Many seem to act specifically on the Brain; as Stramonium, pink root, &c, some act primarily on the nerves, — on the Muscular fibres, — skin, — stomach & bowels — & some on all — destroying the excitability by excessive stimulus —. Some act specifically on the lungs; as carbonic acid gas — causing them to sink in water —. Some on the blood —. May not death also be induced by the poison so uniting with parts as to prevent the communication of the vital principle, like musical motion is prevented by wax on the strings of a violin? The poisons of serpents act specifically on the coagulable lymph of the blood — From all these we may collect abundant

proof of the existence of specific stimuli—. when we look to the sovereign people for the origin of power, Errors in the science of Government will cease— and in like manner, when we look to the proximate cause & mode of action of diseases, for the regulation of practice, we shall terminate the existence of errors in medicine! —

December 31st Lecture 42d— Worms — have been found in various parts of the body; as the Liver, Urinary bladder— Maxillary & frontal sinuses, & brain— but chiefly in the alimentary canal— there are 3 kinds of worms which infest this canal, viz. the Lumbrices, or round worms; Tenia or tape worm— Ascarides, or movers; these last are found chiefly in the rectum.— The round worm is said to be of the same species as the round earth-worm— it is certain that what destroys the one will destroy the other.— The tape worm is the most rare, as well as the most formidable—. It has many joints & is often of great length—. How are they formed in the bowels? They are conveyed there by aliments & by mothers milk.— From their being so universal Dr. R.— concludes, that they exist necessarily in the body— they are kindly sent to prevent diseases by destroying the superfluous matter taken in by children— for children are all Gluttons—. Dr R. thinks there are diseases

from the want of worms – particularly the round worms – they only cause disease by too great number, and wrong loci. We should have our eyes as much to worms in the diseases of Children, as we have to the Measles in those of females, or Gout in those of high livers –. When fevers are brought on in children, worms may do only as an exciting cause. – Dr. R is far from overlooking worms as a cause of disease –. In all chronic diseases of children he suspects them. – Diseases and Death have been caused by swallowing cherry stones, &c; pieces of copper, lead, iron, &c. Some substances are introduced into the Lungs and produce disease; as water melon seeds – crumbs of bread, – meal in millers, &c. which if not soon discharged, by coughing, cause death. – Pins in the flesh sometimes occasion ulcers to be difficult to heal as do gun powder, grains of shot, &c. – Children Children are apt to put substances up their noses, which, if not removed, dispose to polypi – Dr. R. attended a Lady with a pain in the Uterus – She recovered not by any medicine of mine, said the Dr, but by discharging a pin. – Small splinters pins &c, under the finger nails, have caused Lock jaw –. There are

many diseases occasioned by costiveness & hardned faces—. We ought to have a stool every day— but many go for days and even weeks without; & yet have good health—. The sea, or rather sailing disposes to costiveness— & Man went from Philadelphia to Lisbon and back without a stool! The motion at sea determines to the surface of the body, and thereby diminishes the action of the intestines. Costiveness causes head ache by the faces compressing the descending aorta— piles by their compressing the hemorrhoidal veins— suppression of urine by compressing the *neck of the bladder and preventing excretion; or by compressing the kidneys & preventing secretion? *This kind of suppress may be removed 99 times out of an 100 by a purge—. people who are subject to bowel complaints seldom attain to old age— The long life of birds has been attributed to the speedy discharge of their faces— no absorption taking place from them after they become acrid.— It is said there is a man in Jersey who has not had a stool for 10 or 15 Years! He vomits his aliment after it has lain in his stomach a while. Many diseases are referred to suppress

perspiration (and some of them with truth.) If a person be not debilitated, the obstruction of perspiration is not injurious - the obstructed matter passes off by urine. - Instance, persons in health ike a cola day discharge large quantities of urine. Sneezing is produced by obstructed perspiration. - Eruptions on the skin occur from chronic ~~eruptions~~ obstruction. - Obstruction of bile produces costiveness - Gall stones are not of a calculous nature they are oily and inflammable, &c. - There are no diseases occasioned by the retention of semen, unless when accompanied by urgent desire of coition - . In this case ill diseases melancholy, madness, &c, attended with priapism. Suppression of the menses also causes some diseases; as chlorosis, hemoptoe, &c, &c. Too much stimulation causes diseases of indirect debility - too much rest those of direct debility. Man was made to be active and cannot be healthy without action - . Too much sleep induces direct debility, & plethora. A German physician fancied sleep to be the natural state of man; and by trying the experiment slept away his existence. Wakefulness is a relative term - Many people pass weeks & months without sleep - A Spaniard passed a whole life to old age, without sleep! This is

done by the application of powerful stimu-
-li. The appetite is greater during wake-
-fulness. — Wakefulness is caused by cold-
-ness — passions of the mind, &c. — Effects of
the mind upon the body —. Thinking is
a stimulus upon the body — Midnight
studies are bad. — the less easily compre-
-hended any subject is, the more debili-
-tating its effects on the understanding
and body. — In this country Knowledge
is preferred to learning; and therefore
diseases of this kind are more rare —
Learning is an acquaintance with
words and opinions — Knowledge is an
acquaintance with truth. — The less the under
-standing is employed, the stronger the pass-
-ions —. The passions act like heat and cold —
Stimulating passions act positively —
Sedative passions act negatively — this
doctrine originated with Dr. Brown —
Love, when successful is a very powerful
stimulus — Grief is but a less degree of joy. —
political joy has the most powerful effect up-
-on the mind — it has caused instant death,
as in the Door keeper of Congress on hear-
-ing of the capture of Cornwallis —. Sud-
-den great fortune has caused suicide. —

There is a joy of fear - The Indian chief, Logan knew not the joy of fear - This is the highest grade of courage - Anger is wisely implanted in our hearts - "Be angry and sin not - let not the Sun go down upon thine anger" -. It is a violent Stimulus - has caused sudden death A Jury in Philadelphia, died of anger during the war because he had to pay taxes to support rebellion! Grief - the Auricles and even ventricles of the heart have been ruptured by grief - Grief changes Hysteria into Hypochondriasis - There is a weeping point - above and below which tears cannot flow -. persons in deep grief often sleep very soundly -. The reason of this is, the grief reduced the System to the sleeping point. — — — —

January 3d. Lecture 43d - Influence of the passions on health and Life. Fear was wisely given us for the purpose of defending ourselves, or rather avoiding danger - In this simple state its influence is salutary - but when to excess, it causes loss of memory, hysteria, asphyxia, mania, & death - causes

the hair to stand erect - to become grey, &c,
It has rendered the hair grey in a single
night. It has caused Baldness - In the mind
or on the mind, its effects are also great -
It destroys the memory - deposes or Extermits
for a while all other passions - produces thirst
The cry of the flying soldiers is Water! Water!
with his tongue out of his mouth - It de-
-stroys benevolence - The best friends are de-
-serted through its influence (Instance, Apostle
Peter) who combined with other passions, fear
acts with double force - . Fear like other seda
tives, favours the action of other Stimuli.
Love is combined with ~~other~~ fear. When
fear is combined with anger it produces
great strength . - Envy is a continual Blis-
-ter or iside - It knows no holiday - Many
of the diseases of high life are owing to it -
Ambition - . Its mortifications are attended
with disease and Death. - Avarice, abstracts
that which is due to the world - to country
to friends, to wife, to children - & even to self.
Epitaph: "Here lies ——— in cold clay clad,
For want of what he had" —
It is only by a knowledge of the passions that
we are able to govern the understandings

or morals of men—. Legislators, Diviners, & schoolmasters, have much of this yet to learn, before they may expect to see the good works prevail which they attempt to inculcate.

Venery in early life is injurious also in old age—. Obscene conversation is increased after 50 years of age—. Spanish flies have been taken in Europe, by old men, to excite the venereal appetite.—Death was the consequence in a case which occurd while Dr. R. was in London—. Boarding schools, where the sexes see each other continually, excite venereal desires—. Many terrible diseases are brought on by the detestable vice of onanism (vide Supra) A young man in Massachusetts, Ætat. 21 years, emitted semen 4 times a day in consequence of the practice of onanism in early life.—It produces pain in the Back—A discharge of bloody semen from its being emitted before it is completely formed? It unfits for marriage—ruins the constitution—and renders the wretched, abject who gives way to it, truly miserable & degraded.—

Influence of different States of society

on life & health.- Savages, live by hunt-ing, fishing, &c.- Barbarians, by pasturing flocks, &c. and Civalized nations, by commerce agriculture, &c. The natural diseases of sava-ges are few and principally fevers.- This is what the natives of our country were chiefly subject to, before others were intro-duced among them.- From their living and encamping near waters, they suffer from exhalations.- The yellow fever has swept of whole tribes of them before it made its appearance among us- perhaps it was owing to their having no quarantine laws to prevent importation!!!

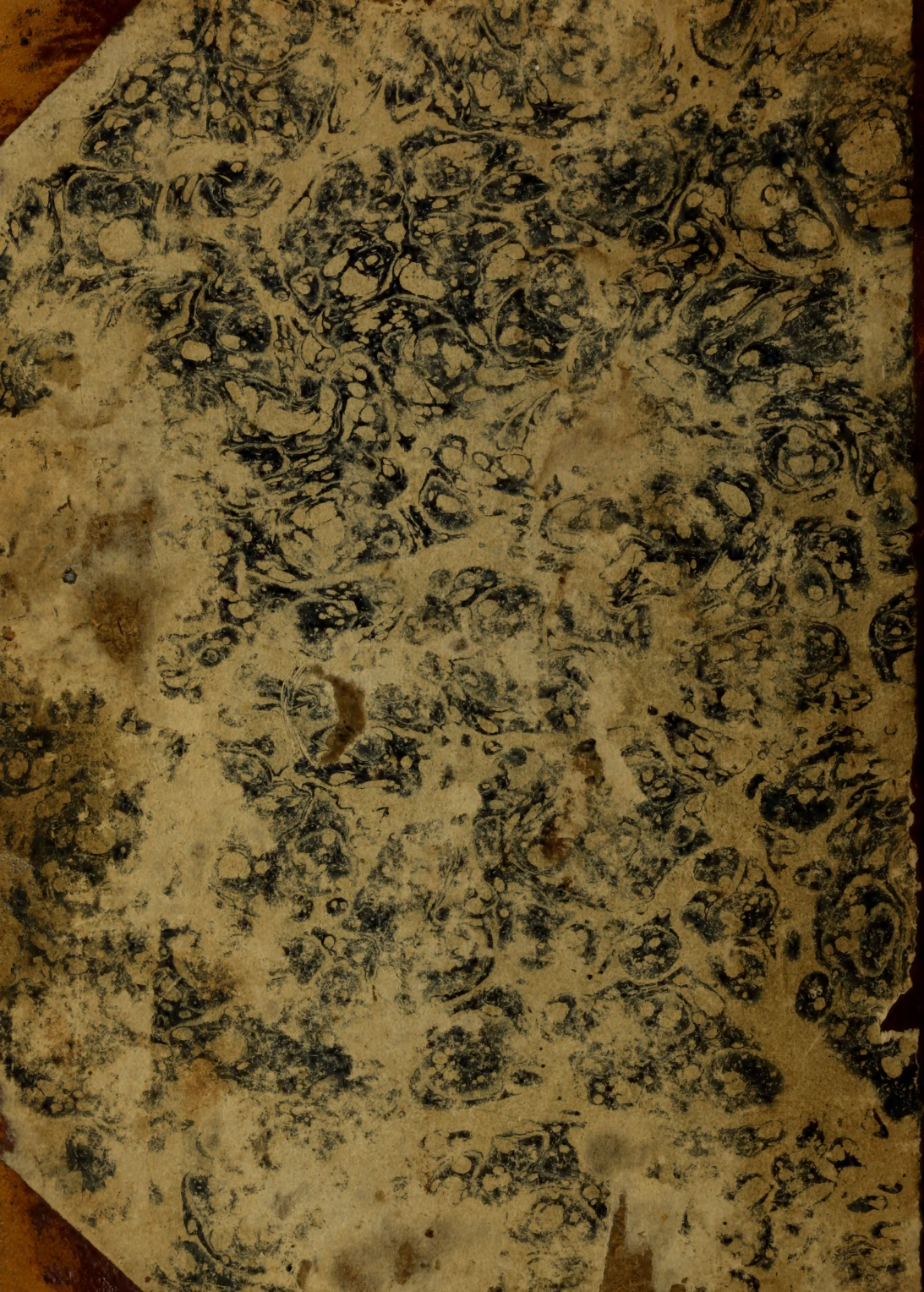
The causes which now produce consumption formerly produced only moderate pneumony rheumatism, &c. Hysteria is a disease of the 1st. or highest grade of life; Gout of the 2d.- as in independent Gentlemen.- 3d. Teva 4th. Common people as sailors, Soldiers, &c. have pleurisy, &c.- Influence of Government on health & Life. Despotic government hold life in a feeble state.- The negro slaves in the West Indias posess more irritability than sensability- hence they are more liable to

convulsive diseases— but bear surgical opperations better—. Mixed governments are not good— They dispose to great anxiety, &c. Instance, Lord Chatham, &c. Republican Governments, or those dependant on the sovereignty of the people, are the best— and are kept so by the frequent recurrence of Elections—. You see here, gentlemen, says Dr R.—. the same unity of truth as elsewhere. A physician who is not a republican contests his own principles.—Joy acts with more force on Britans than Americans, from the accumulation of excitability, occasioned by fear of oppression—. Elections serve to carry off the excitability, like chimneys carry off smoke; and hence excitability is more accumulated in Britons from the want of those Political Chimneys— and hence their political joys and fears are more excessive and fatal! Religion— It is in vain for man to try not to be religious; or at least, to not not Worship— for he will substitute a new god, if he should ever forsake the Worship of the true & unchangeable deity—. Many nations have gone the round in worshiping deities, and at length returned to the worship of the only true God.— — —

Finis. Oct. 1st.

"There is in the inhabitants of hot climates unless present sickness has an absolute control over the body, a promptitude and bias to pleasure, and an alienation from serious thought & deep reflection. The brilliancy of the skies, and the levity of the atmosphere, conspire to influence the nerves against Philosophy and her frigid tenents, and forbid their practice among the children of the sun."

Dr. Moseley

These eyes, like lamps whose wasting oil is spent,
Wax dim, as drawing to their exigent.

Shakspeare. Mortimer.
in King Henry 6th.